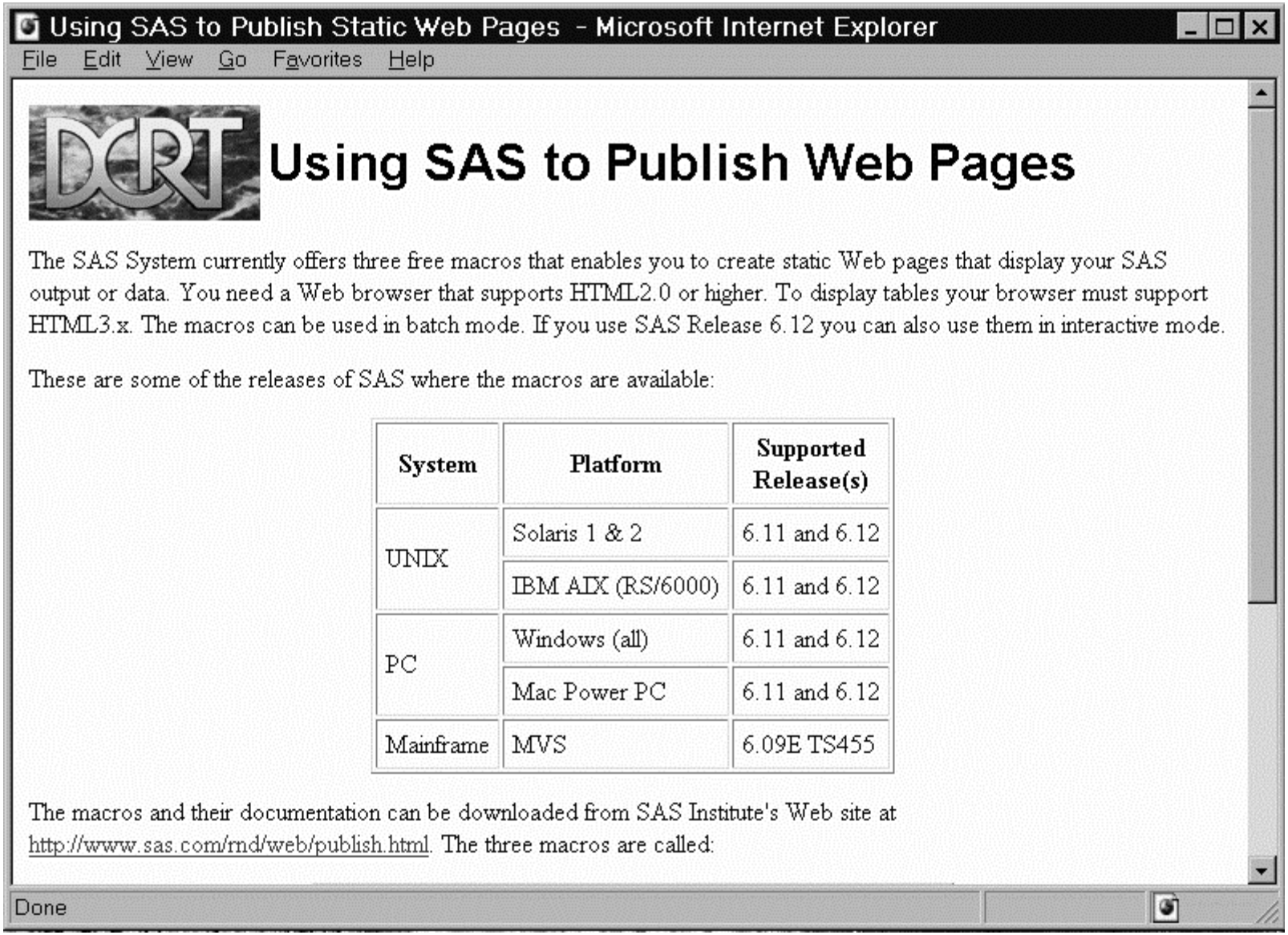
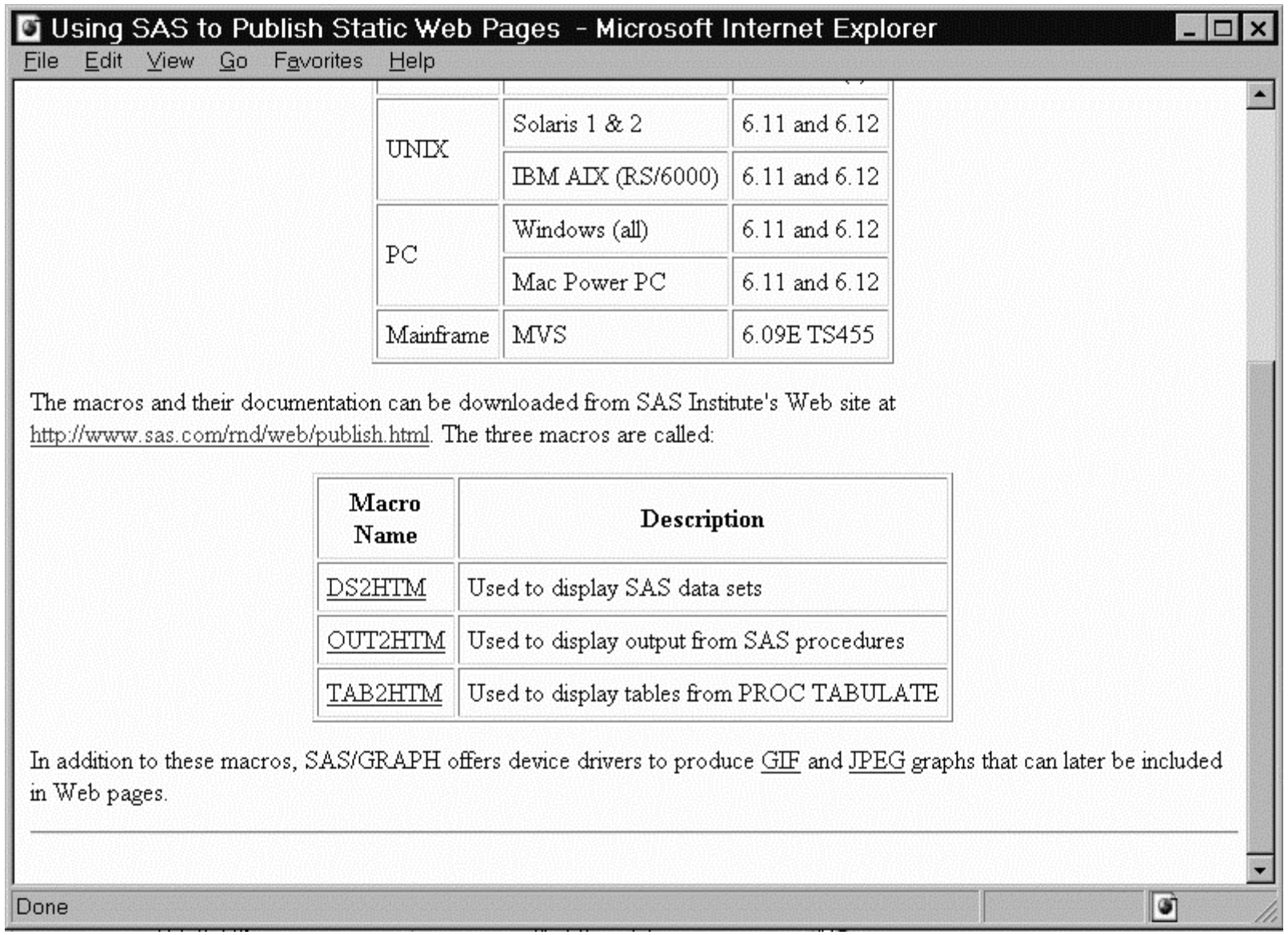
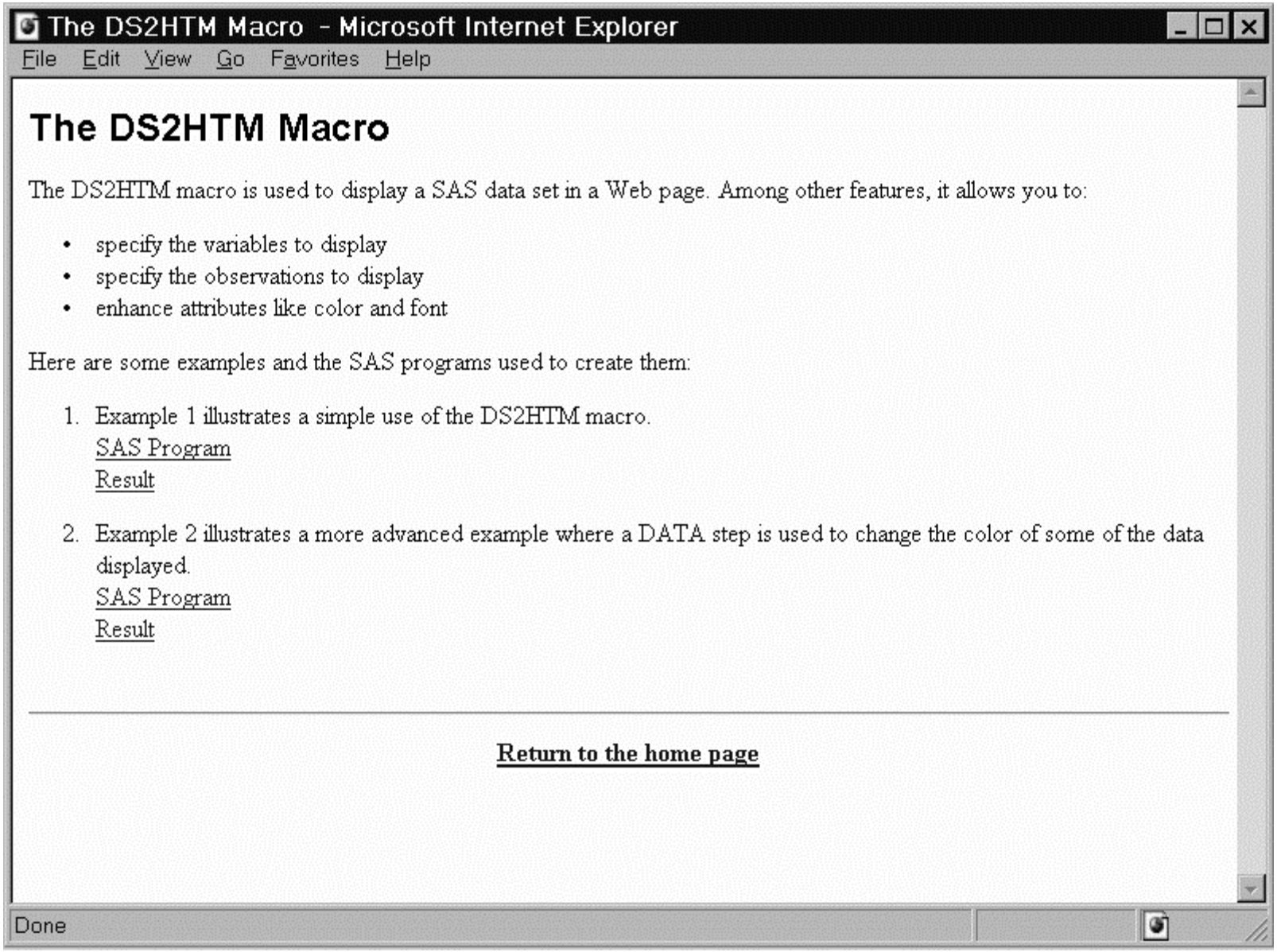
Using SAS to Publish Web Pages

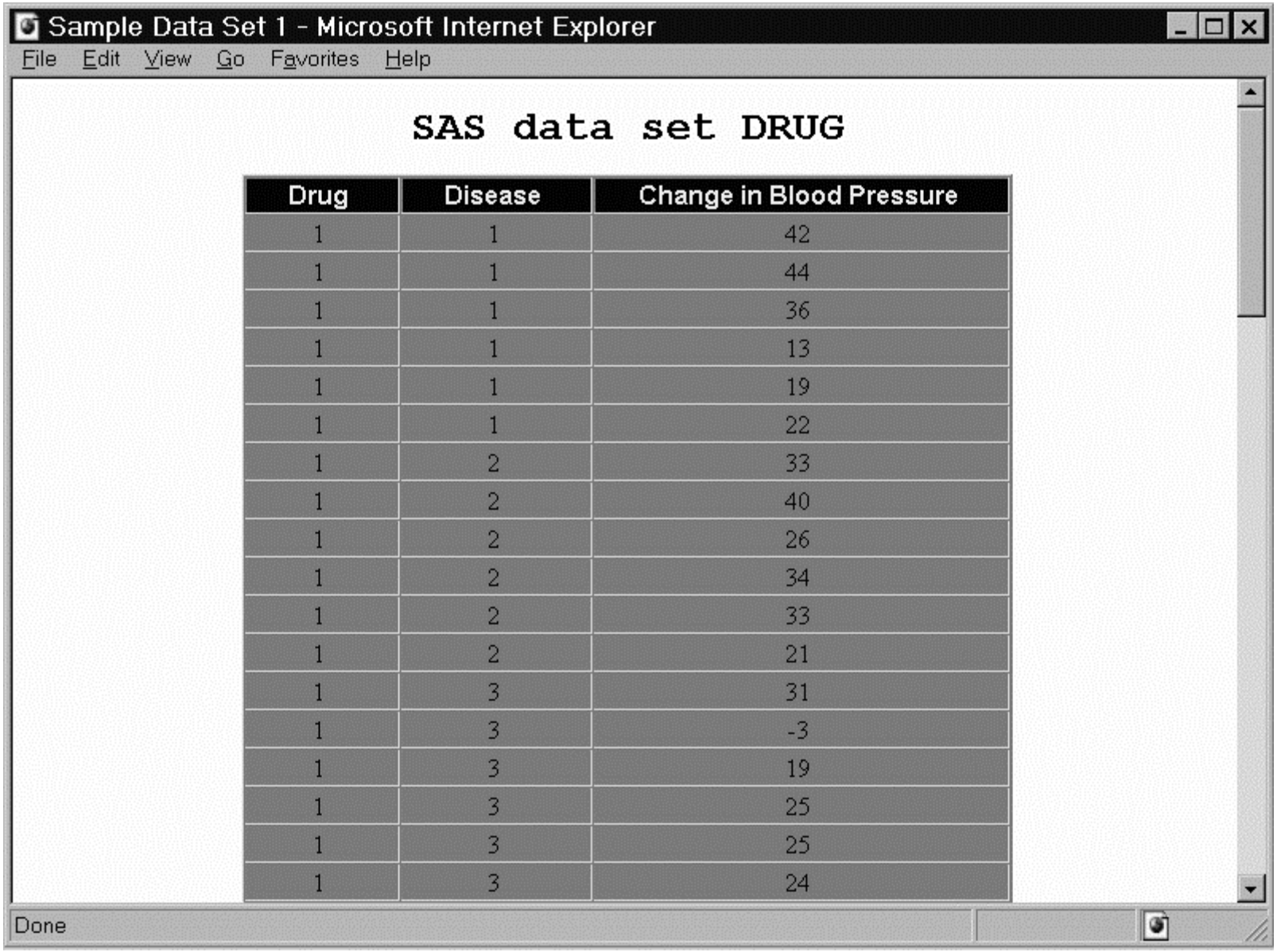
by Elvira Agrón

Fall 1997
Statistical Support Staff
Division of Computer Research and Technology
National Institutes of Health

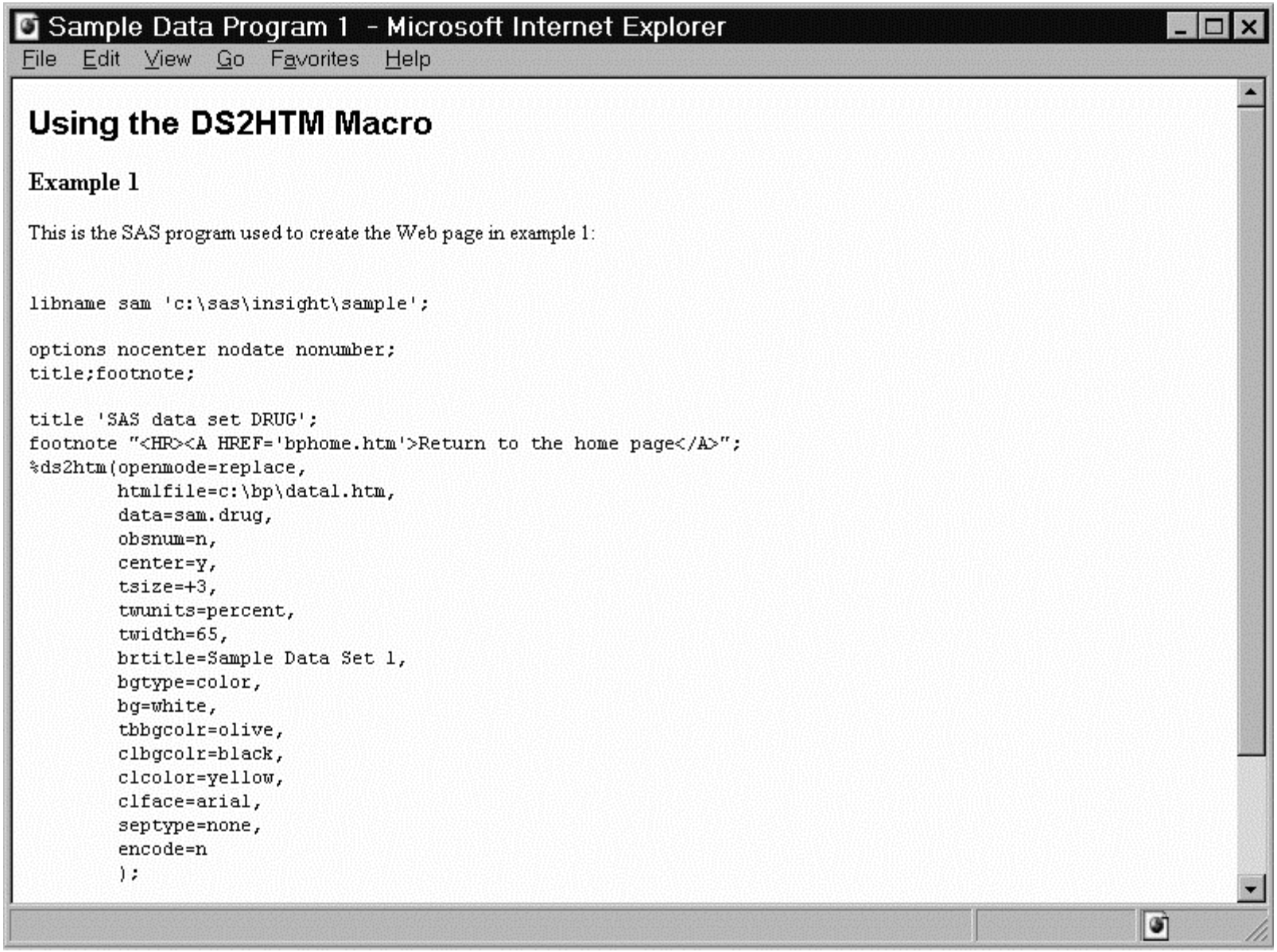

Using SAS to Publish Static Web Pages - Microsoft Internet Explorer
File Edit View Go Favorites Help
DCRT
Using SAS to Publish Web Pages
The SAS System currently offers three free macros that enables you to create static Web pages that display your SAS output or data. You need a Web browser that supports HTML2.0 or higher. To display tables your browser must support HTML3.x. The macros can be used in batch mode. If you use SAS Release 6.12 you can also use them in interactive mode.
These are some of the releases of SAS where the macros are available:
System
Platform
Supported Release(s)
UNIX
Solaris 1 & 2
6.11 and 6.12
IBM AIX (RS/6000)
6.11 and 6.12
PC
Windows (all)
6.11 and 6.12
Mac Power PC
6.11 and 6.12
Mainframe
MVS
6.09E TS455
The macros and their documentation can be downloaded from SAS Institute's Web site at http://www.sas.com/rnd/web/publish.html. The three macros are called:
Done

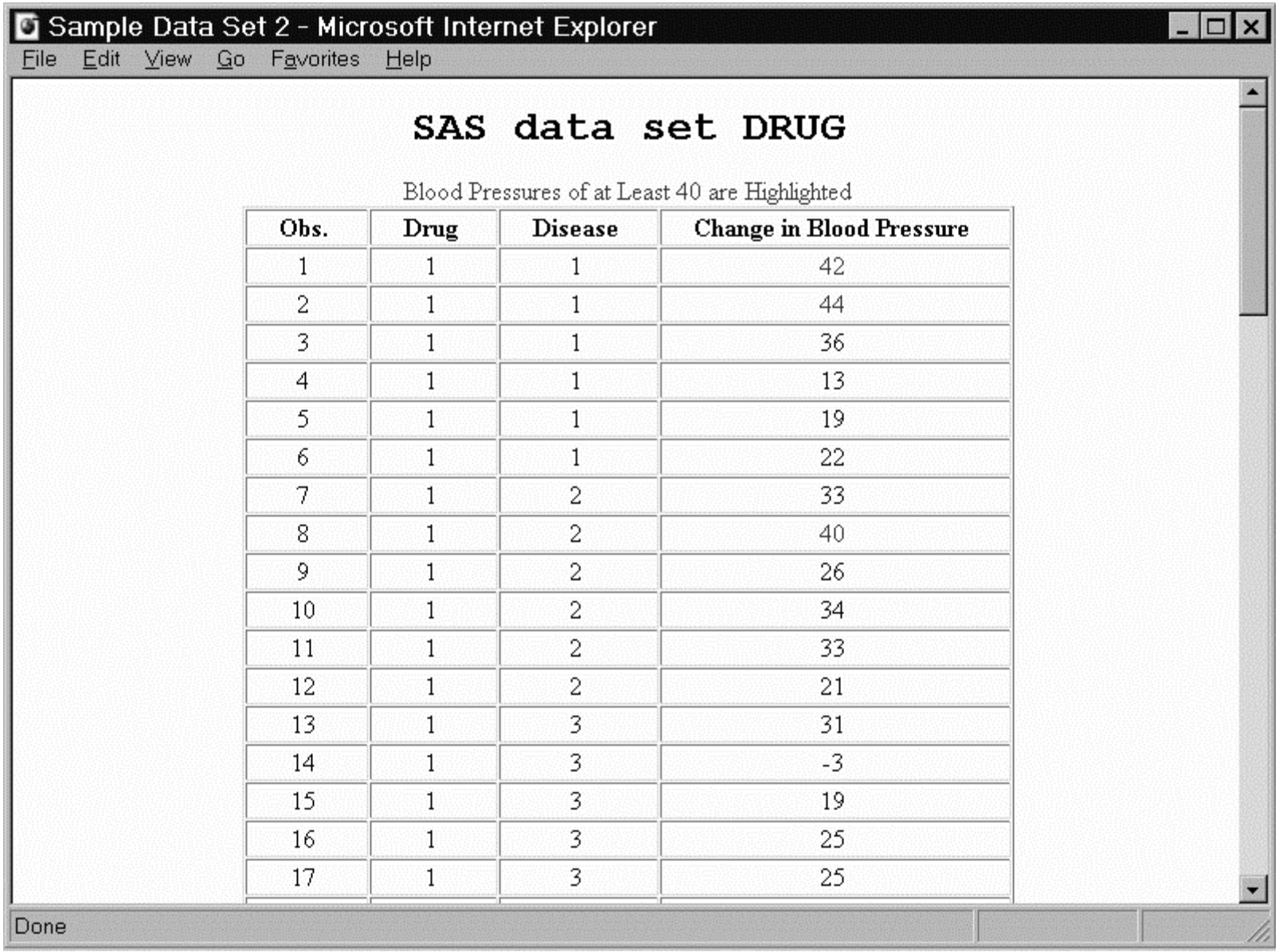

Using SAS to Publish Static Web Pages - Microsoft Internet Explorer
File Edit View Go Favorites Help
UNIX
Solaris 1 & 2
6.11 and 6.12
IBM AIX (RS/6000)
6.11 and 6.12
PC
Windows (all)
6.11 and 6.12
Mac Power PC
6.11 and 6.12
Mainframe
MVS
6.09E TS455
The macros and their documentation can be downloaded from SAS Institute's Web site at http://www.sas.com/rnd/web/publish.html. The three macros are called:
Macro Name
Description
DS2HTM
Used to display SAS data sets
OUT2HTM
Used to display output from SAS procedures
TAB2HTM
Used to display tables from PROC TABULATE
In addition to these macros, SAS/GRAPH offers device drivers to produce GIF and JPEG graphs that can later be included in Web pages.
Done


The DS2HTM Macro - Microsoft Internet Explorer
File Edit View Go Favorites Help
The DS2HTM Macro
The DS2HTM macro is used to display a SAS data set in a Web page. Among other features, it allows you to:
specify the variables to display
specify the observations to display
enhance attributes like color and font
Here are some examples and the SAS programs used to create them:
1. Example 1 illustrates a simple use of the DS2HTM macro.
SAS Program
Result
2. Example 2 illustrates a more advanced example where a DATA step is used to change the color of some of the data displayed.
SAS Program
Result
Return to the home page
Done



Drug	Disease	Change in Blood Pressure
1	1	42
1	1	44
1	1	36
1	1	13
1	1	19
1	1	22
1	2	33
1	2	40
1	2	26
1	2	34
1	2	33
1	2	21
1	3	31
1	3	-3
1	3	19
1	3	25
1	3	25
1	3	24


Sample Data Program 1 - Microsoft Internet Explorer
File Edit View Go Favorites Help
Using the DS2HTM Macro
Example 1
This is the SAS program used to create the Web page in example 1:
libname sam 'c:\sas\insight\sample';
options nocenter nodate nonumber;
title;footnote;
title 'SAS data set DRUG';
footnote "<HR><A HREF='bphome.htm'>Return to the home page</A>";
%ds2htm(openmode=replace,
htmlfile=c:\bp\data1.htm,
data=sam.drug,
obsnum=n,
center=y,
tsize=+3,
twunits=percent,
twidth=65,
brtitle=Sample Data Set 1,
bgtype=color,
bg=white,
tbbgcolr=olive,
clbgcolr=black,
clcolor=yellow,
clface=arial,
septype=none,
encode=n
);



Obs.	Drug	Disease	Change in Blood Pressure
1	1	1	42
2	1	1	44
3	1	1	36
4	1	1	13
5	1	1	19
6	1	1	22
7	1	2	33
8	1	2	40
9	1	2	26
10	1	2	34
11	1	2	33
12	1	2	21
13	1	3	31
14	1	3	-3
15	1	3	19
16	1	3	25
17	1	3	25

Sample Data Program 2 - Microsoft Internet Explorer

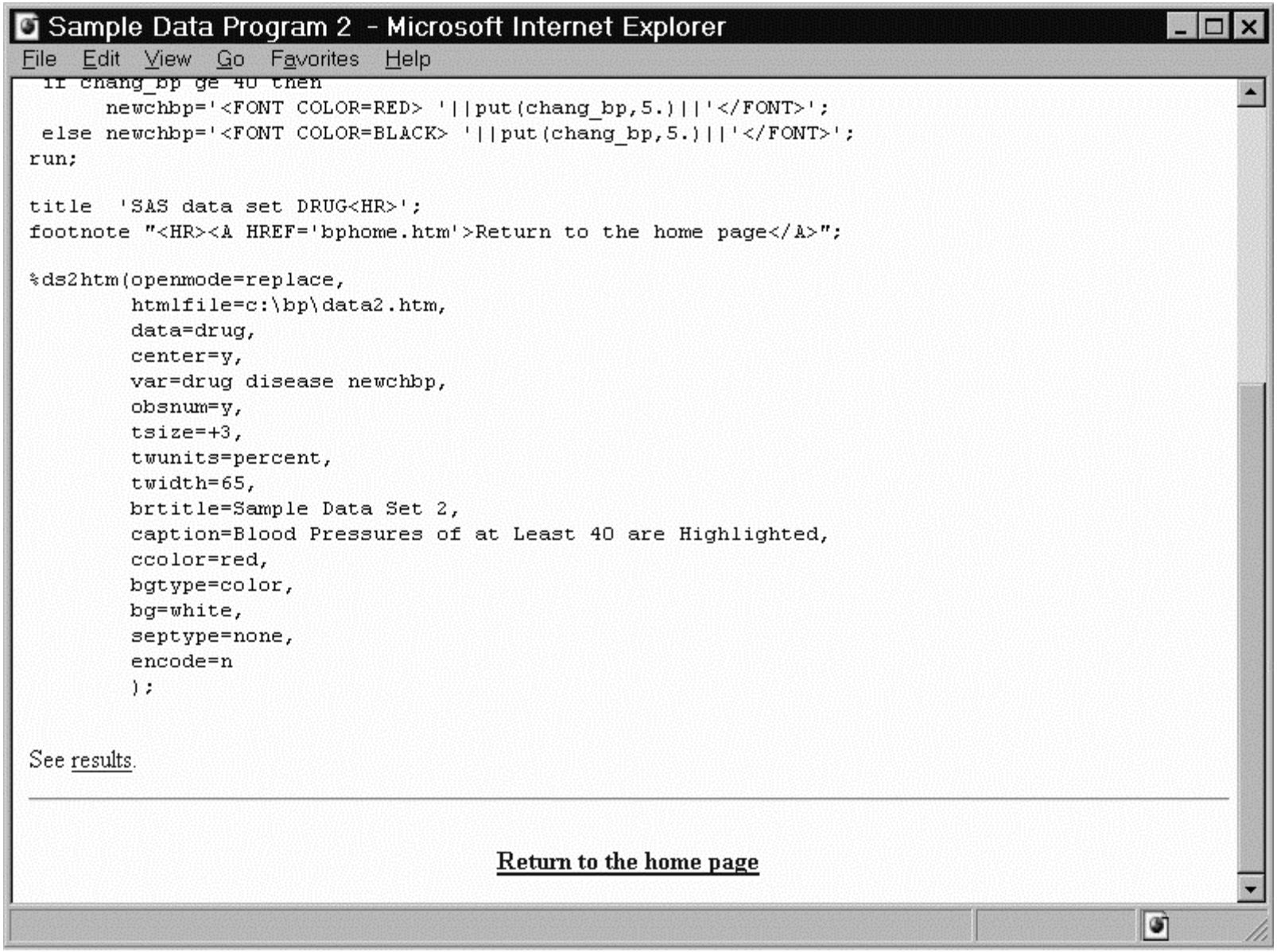
File Edit View Go Favorites Help

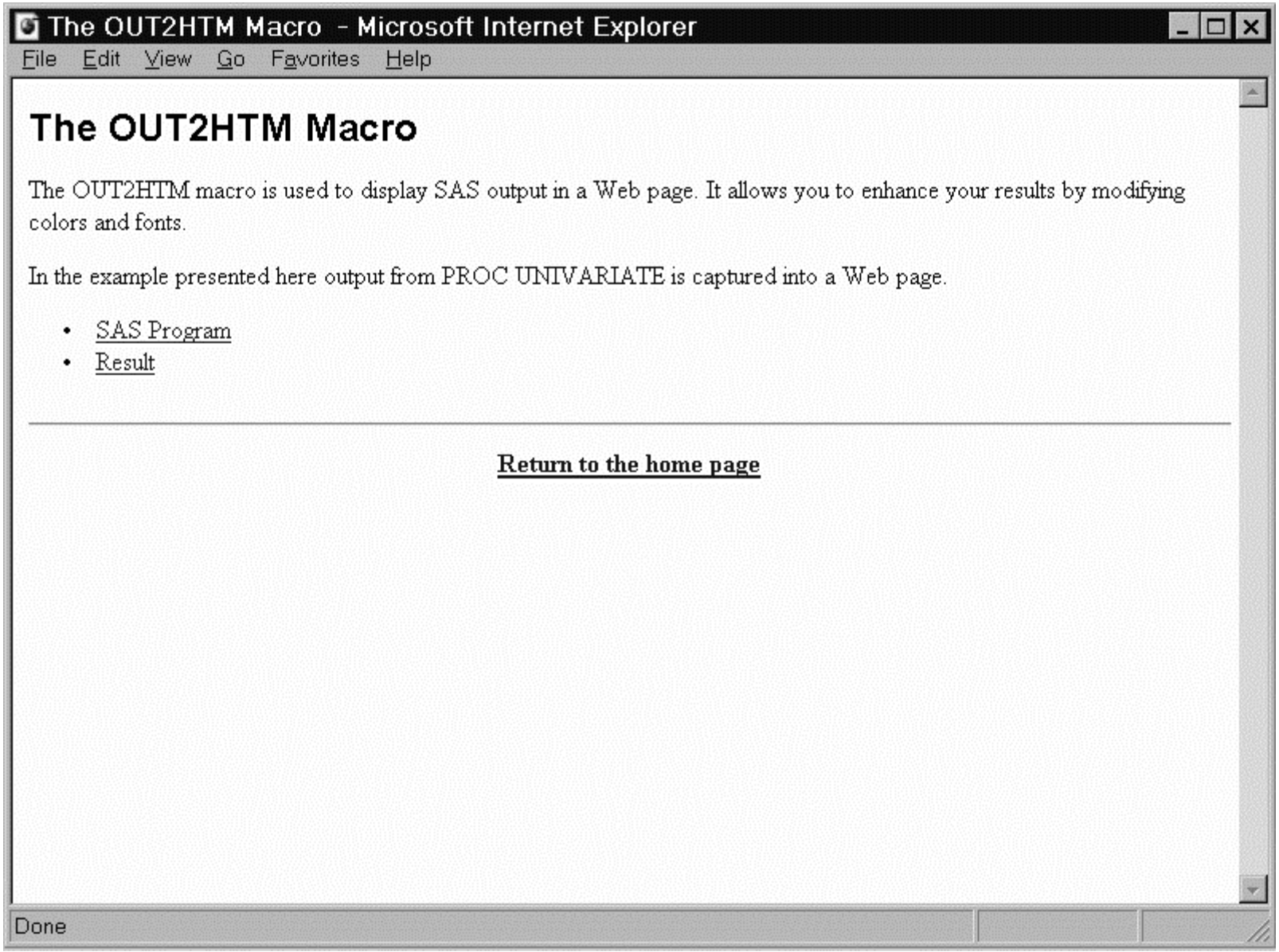
Using the DS2HTM Macro

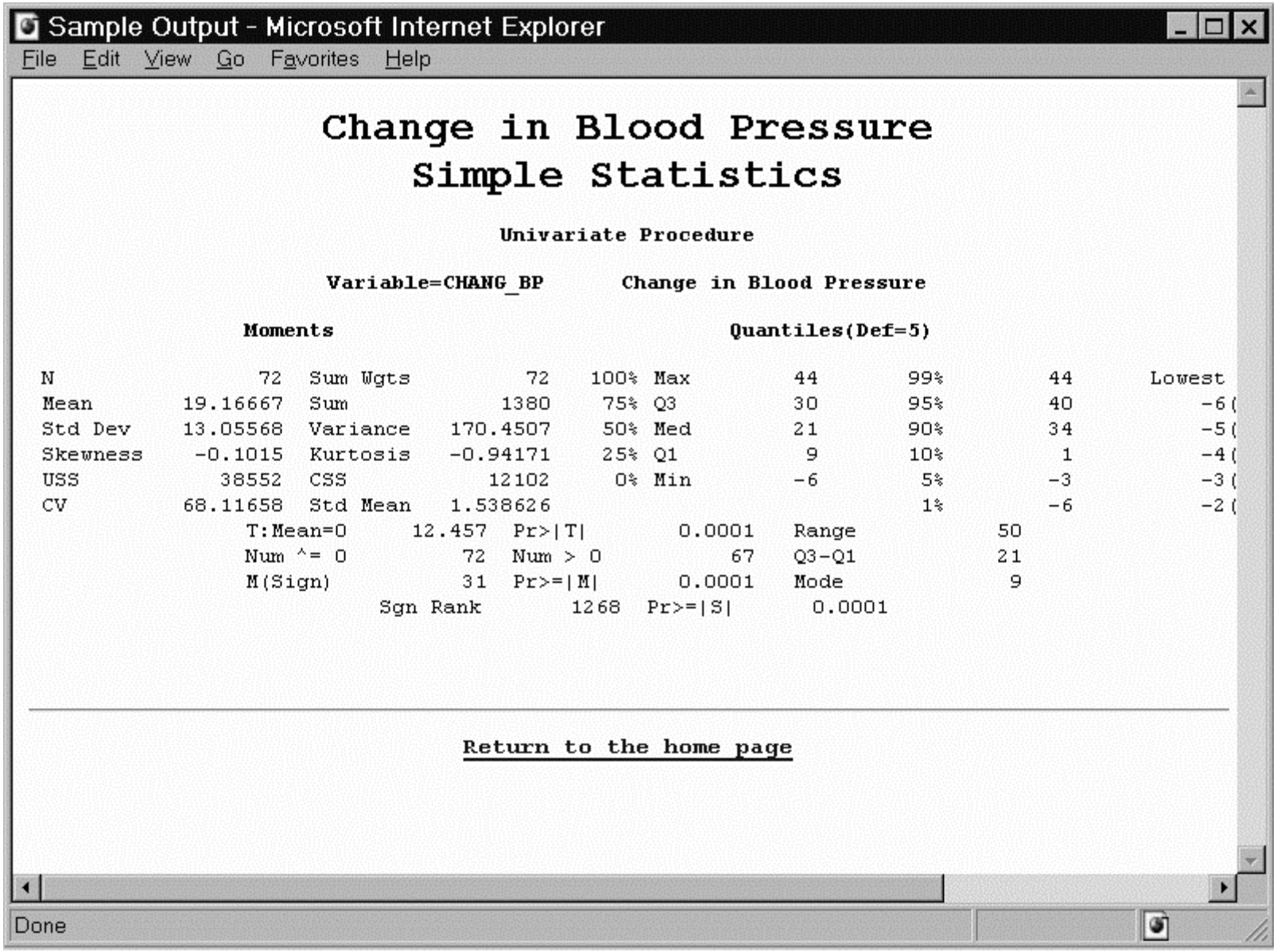
Example 2

This is the SAS program used to create the Web page in example 2:

```
libname sam 'c:\sas\insight\sample';

options nocenter nodate nonumber;
title;footnote;

data drug;
 set sam.drug;
 length newchbp $ 200;
 label newchbp='Change in Blood Pressure';
 if chang_bp ge 40 then
      newchbp='<FONT COLOR=RED> '||put(chang_bp,5.)||'</FONT>';
 else newchbp='<FONT COLOR=BLACK> '||put(chang_bp,5.)||'</FONT>';
run;

title  'SAS data set DRUG<HR>';
footnote "<HR><A HREF='bphome.htm'>Return to the home page</A>";

%ds2htm(openmode=replace,
        htmlfile=c:\bp\data2.htm,
        data=drug,
        center=y,
        var=drug disease newchbp,
        obsnum=y,
        tsize=+3,
```


Sample Data Program 2 - Microsoft Internet Explorer
File Edit View Go Favorites Help
if chang_bp ge 40 then
newchbp='<FONT COLOR=RED> '||put(chang_bp,5.)||'</FONT>';
else newchbp='<FONT COLOR=BLACK> '||put(chang_bp,5.)||'</FONT>';
run;
title 'SAS data set DRUG<HR>';
footnote "<HR><A HREF='bphome.htm'>Return to the home page</A>";
%ds2htm(openmode=replace,
htmlfile=c:\bp\data2.htm,
data=drug,
center=y,
var=drug disease newchbp,
obsnum=y,
tsize=+3,
twunits=percent,
twidth=65,
brtitle=Sample Data Set 2,
caption=Blood Pressures of at Least 40 are Highlighted,
ccolor=red,
bgtype=color,
bg=white,
septype=none,
encode=n
);
See results.
Return to the home page


The OUT2HTM Macro - Microsoft Internet Explorer
File Edit View Go Favorites Help
The OUT2HTM Macro
The OUT2HTM macro is used to display SAS output in a Web page. It allows you to enhance your results by modifying colors and fonts.
In the example presented here output from PROC UNIVARIATE is captured into a Web page.
SAS Program
Result
Return to the home page
Done



Change in Blood Pressure
Simple Statistics

Univariate Procedure

Variable=CHANG_BP Change in Blood Pressure

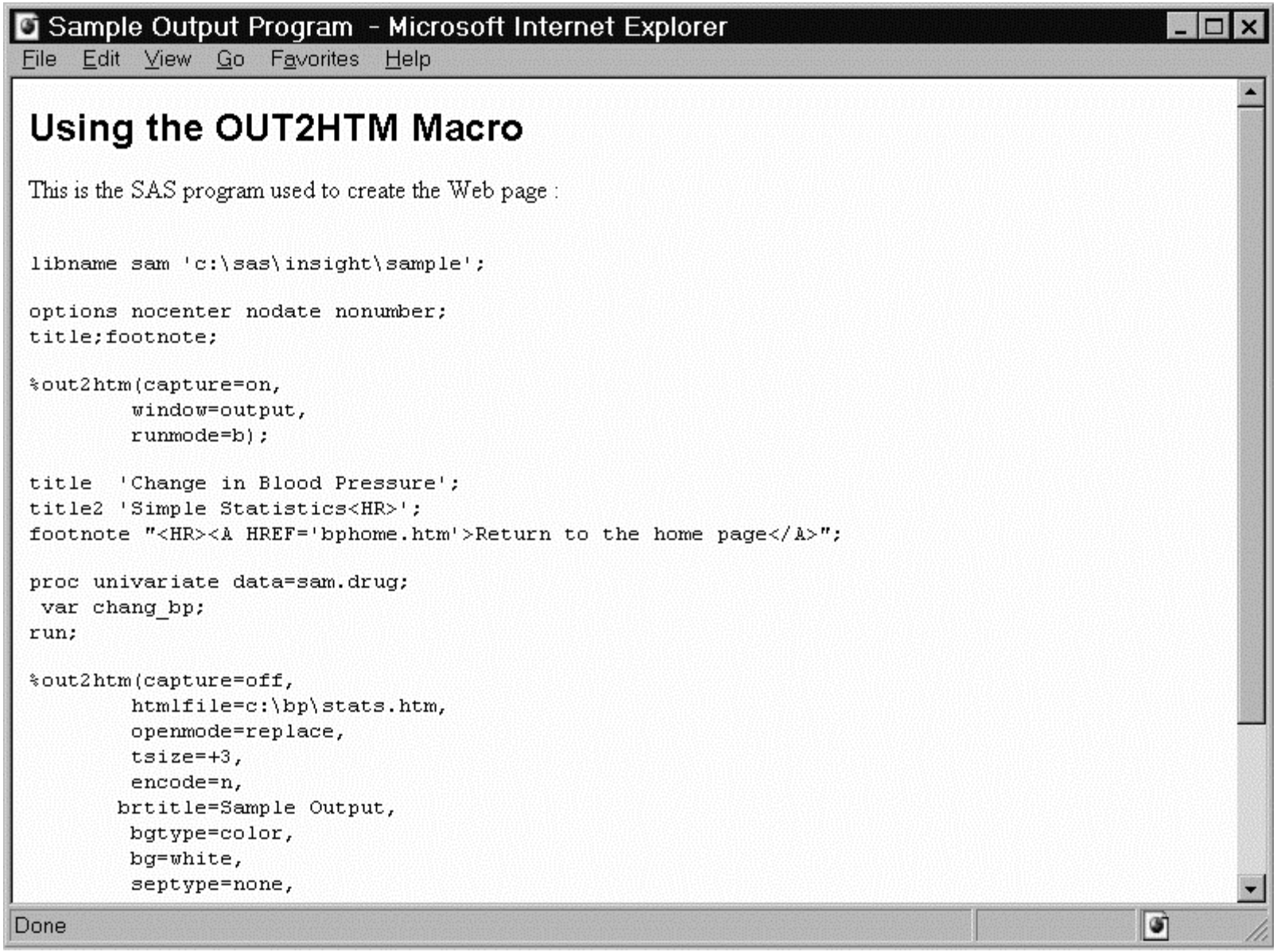
Moments

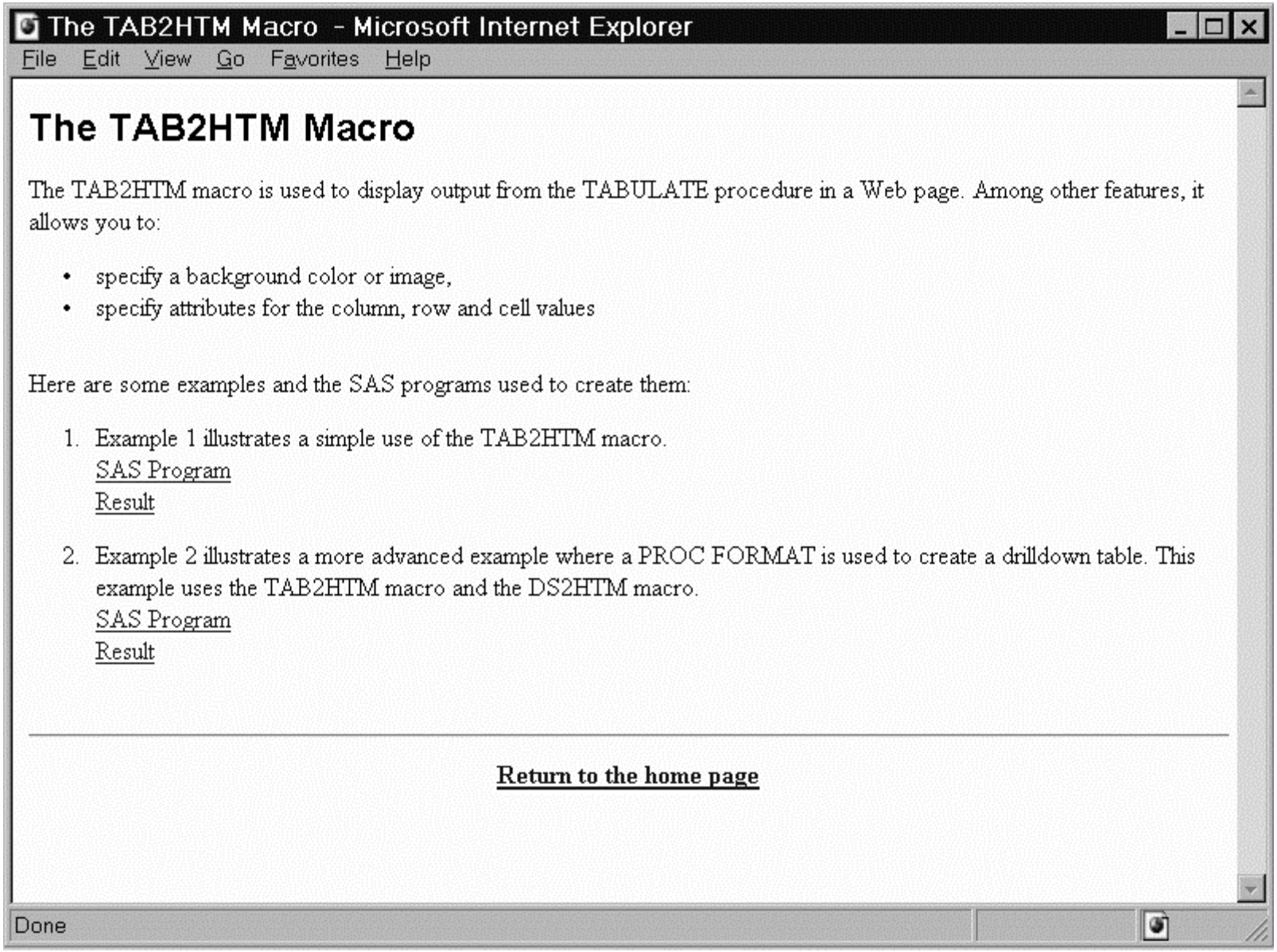
N	72	Sum Wgts	72
Mean	19.16667	Sum	1380
Std Dev	13.05568	Variance	170.4507
Skewness	-0.1015	Kurtosis	-0.94171
USS	38552	CSS	12102
CV	68.11658	Std Mean	1.538626
T:Mean=0	12.457	Pr>|T|	0.0001
Num ^= 0	72	Num > 0	67
M(Sign)	31	Pr>=|M|	0.0001
Sgn Rank	1268	Pr>=|S|	0.0001

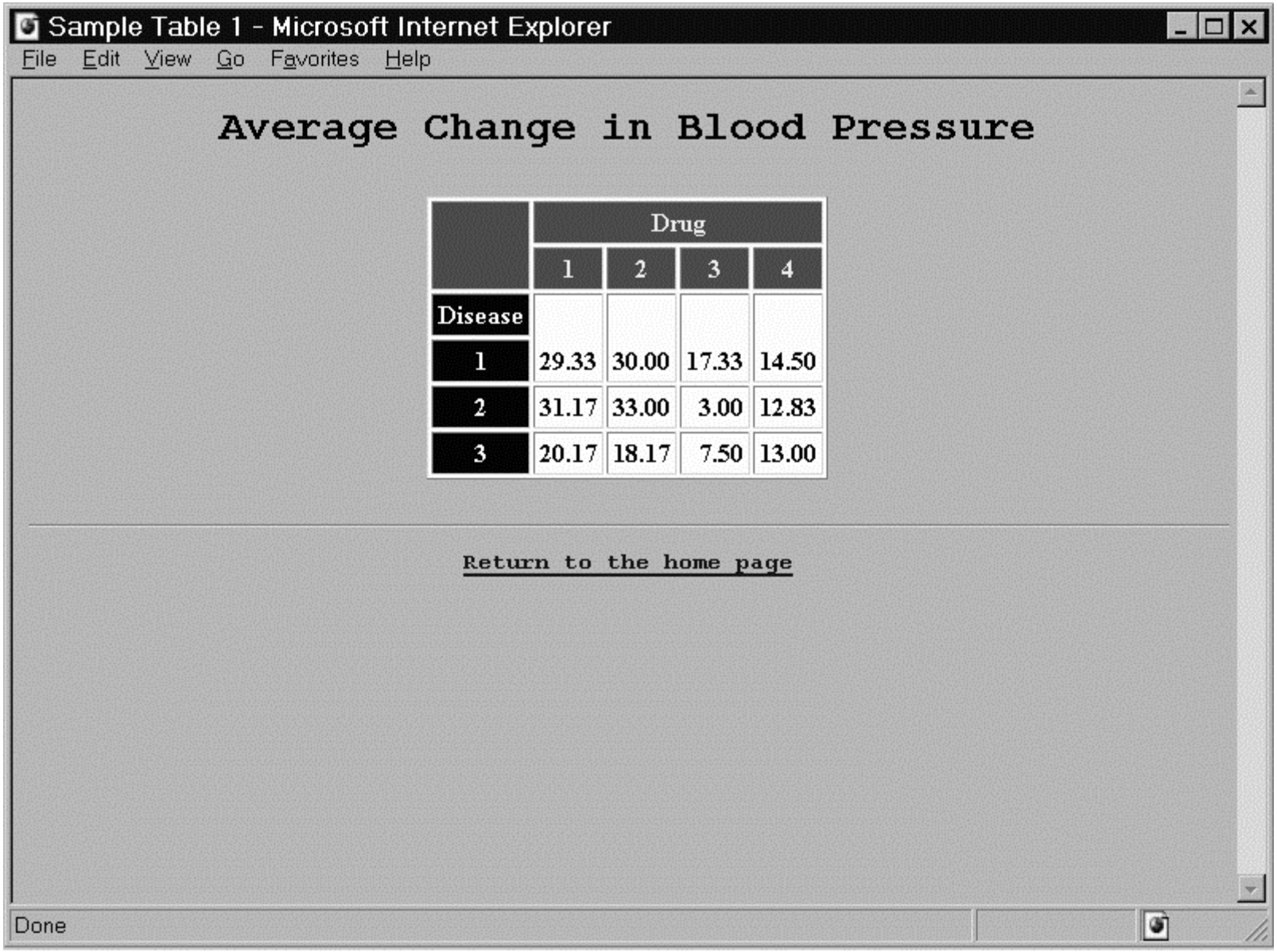
Quantiles(Def=5)

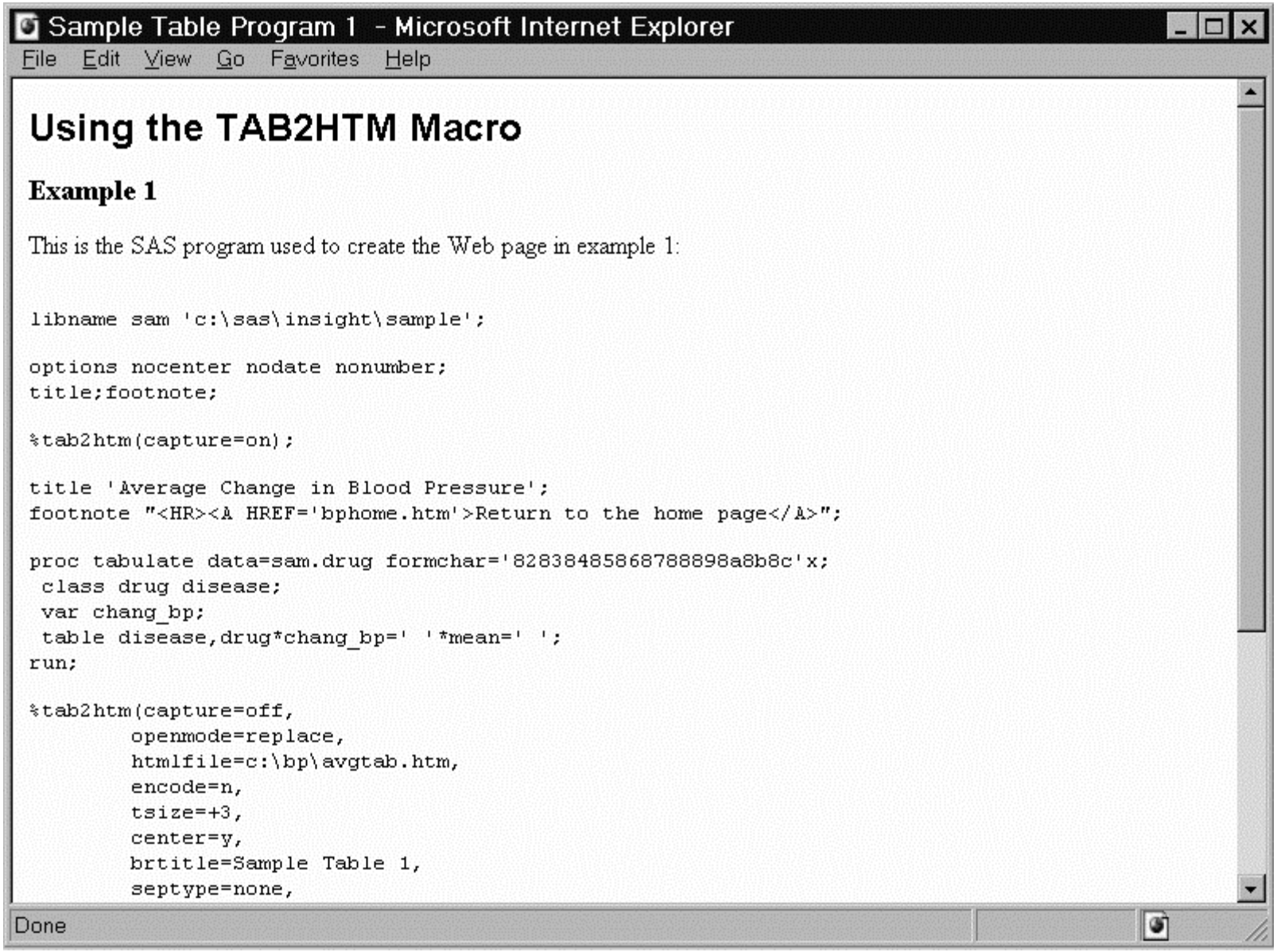
100%	Max	44	99%	44	Lowest
75%	Q3	30	95%	40	-6(
50%	Med	21	90%	34	-5(
25%	Q1	9	10%	1	-4(
0%	Min	-6	5%	-3	-3(
			1%	-6	-2(
Range		50			
Q3-Q1		21			
Mode		9			

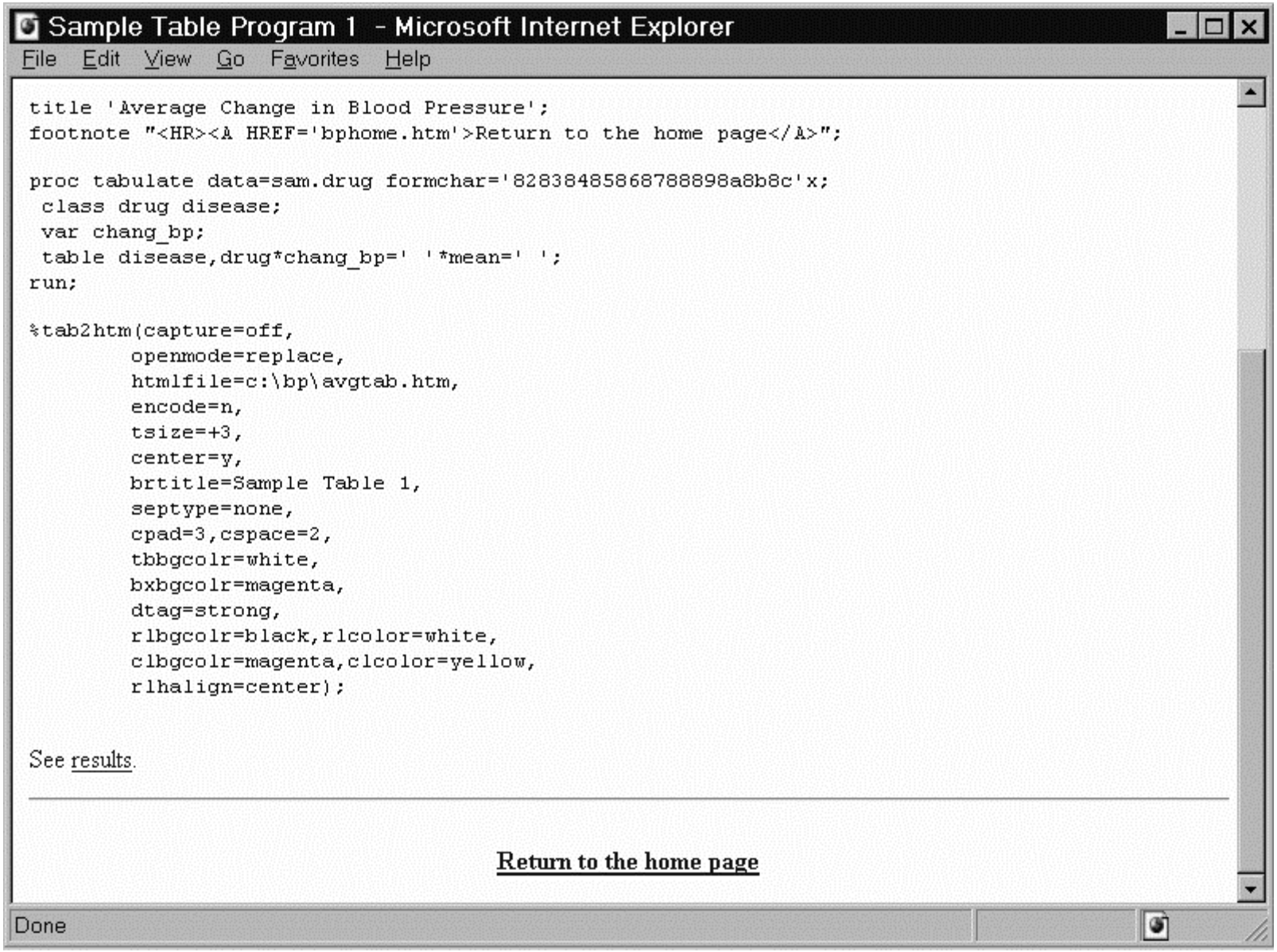
Return to the home page

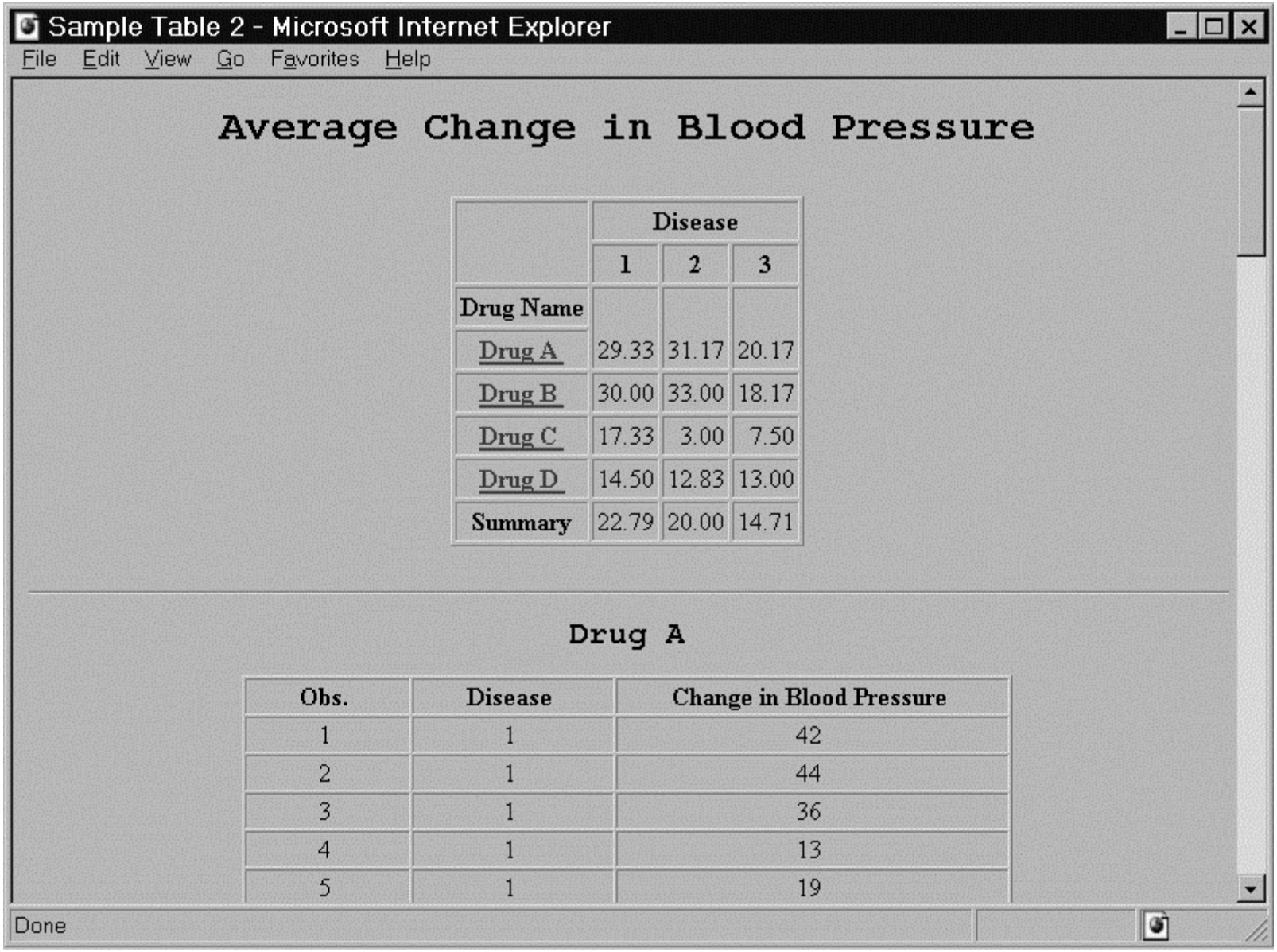

Sample Output Program - Microsoft Internet Explorer
File Edit View Go Favorites Help
Using the OUT2HTM Macro
This is the SAS program used to create the Web page :
libname sam 'c:\sas\insight\sample';
options nocenter nodate nonumber;
title;footnote;
%out2htm(capture=on,
window=output,
runmode=b);
title 'Change in Blood Pressure';
title2 'Simple Statistics<HR>';
footnote "<HR><A HREF='bphome.htm'>Return to the home page</A>";
proc univariate data=sam.drug;
var chang_bp;
run;
%out2htm(capture=off,
htmlfile=c:\bp\stats.htm,
openmode=replace,
tsize=+3,
encode=n,
brtitle=Sample Output,
bgtype=color,
bg=white,
septype=none,
Done


The TAB2HTM Macro - Microsoft Internet Explorer
File Edit View Go Favorites Help
The TAB2HTM Macro
The TAB2HTM macro is used to display output from the TABULATE procedure in a Web page. Among other features, it allows you to:
specify a background color or image,
specify attributes for the column, row and cell values
Here are some examples and the SAS programs used to create them:
1. Example 1 illustrates a simple use of the TAB2HTM macro.
SAS Program
Result
2. Example 2 illustrates a more advanced example where a PROC FORMAT is used to create a drilldown table. This example uses the TAB2HTM macro and the DS2HTM macro.
SAS Program
Result
Return to the home page
Done


Sample Table 1 - Microsoft Internet Explorer
File Edit View Go Favorites Help
Average Change in Blood Pressure
Drug
1 2 3 4
Disease
1 29.33 30.00 17.33 14.50
2 31.17 33.00 3.00 12.83
3 20.17 18.17 7.50 13.00
Return to the home page
Done


Sample Table Program 1 - Microsoft Internet Explorer
File Edit View Go Favorites Help
Using the TAB2HTM Macro
Example 1
This is the SAS program used to create the Web page in example 1:
libname sam 'c:\sas\insight\sample';
options nocenter nodate nonumber;
title;footnote;
%tab2htm(capture=on);
title 'Average Change in Blood Pressure';
footnote "<HR><A HREF='bphome.htm'>Return to the home page</A>";
proc tabulate data=sam.drug formchar='8283848586878889 8a8b8c'x;
class drug disease;
var chang_bp;
table disease,drug*chang_bp=' '*mean=' ';
run;
%tab2htm(capture=off,
openmode=replace,
htmlfile=c:\bp\avgtab.htm,
encode=n,
tsize=+3,
center=y,
brtitle=Sample Table 1,
septype=none,
Done


Sample Table Program 1 - Microsoft Internet Explorer
File Edit View Go Favorites Help
title 'Average Change in Blood Pressure';
footnote "<HR><A HREF='bphome.htm'>Return to the home page</A>";
proc tabulate data=sam.drug formchar='8283848586878889 8a8b8c'x;
class drug disease;
var chang_bp;
table disease,drug*chang_bp=' '*mean=' ';
run;
%tab2htm(capture=off,
openmode=replace,
htmlfile=c:\bp\avgtab.htm,
encode=n,
tsize=+3,
center=y,
brtitle=Sample Table 1,
septype=none,
cpad=3,cspace=2,
tbbgcolr=white,
bxbgcolr=magenta,
dtag=strong,
rlbgcolr=black,rlcolor=white,
clbgcolr=magenta,clcolor=yellow,
rlhalign=center);
See results.
Return to the home page
Done

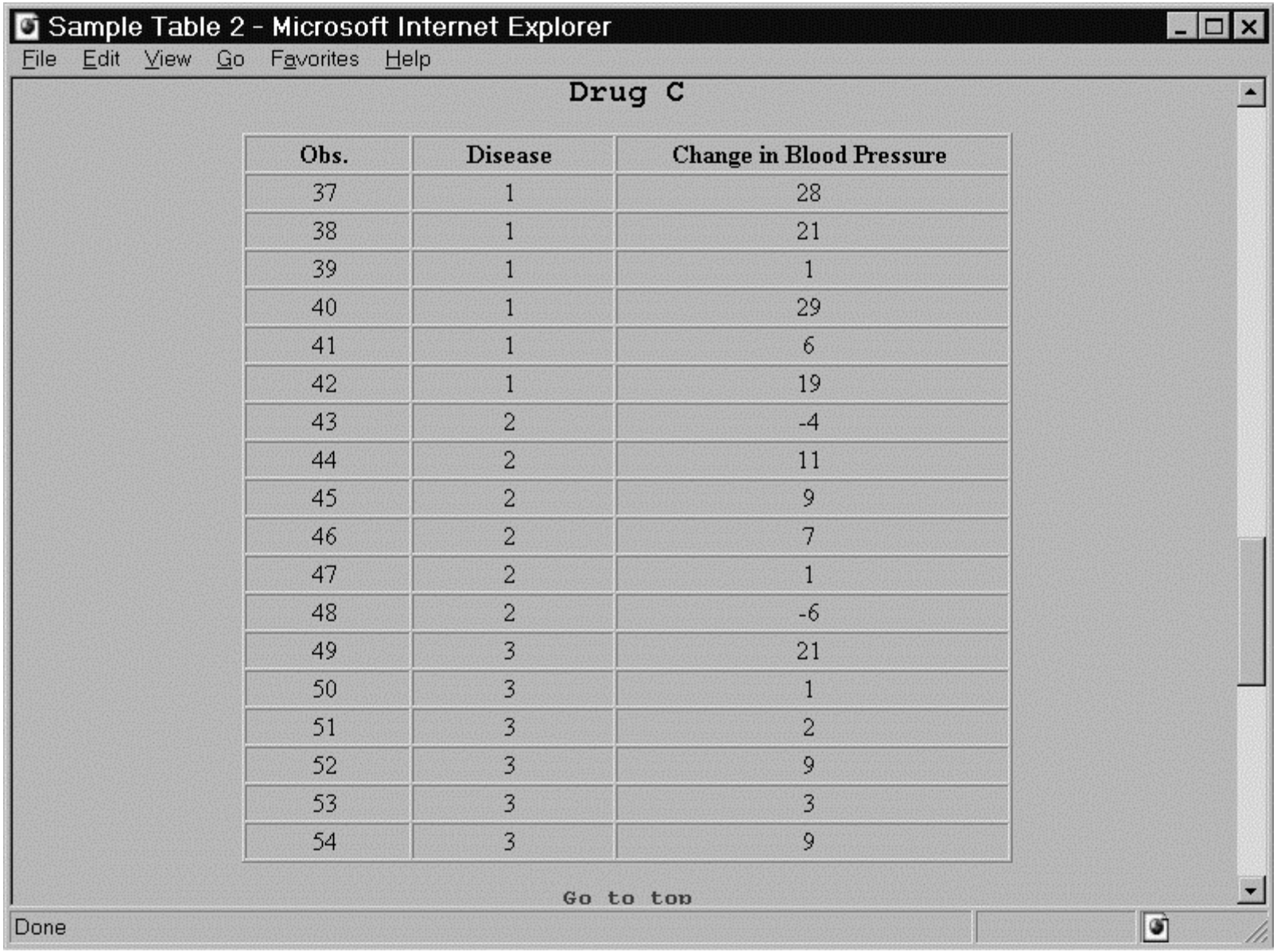


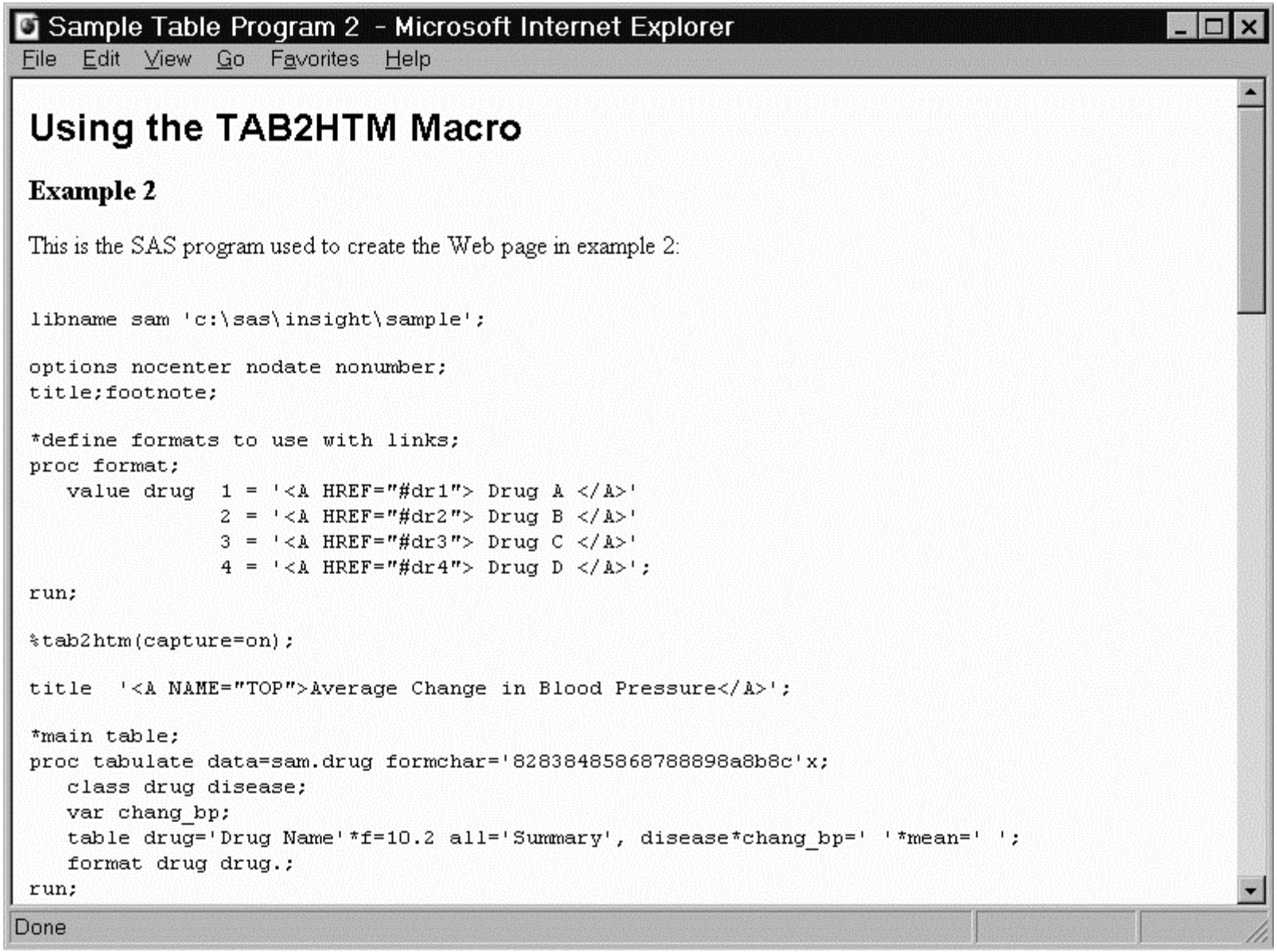
Average Change in Blood Pressure

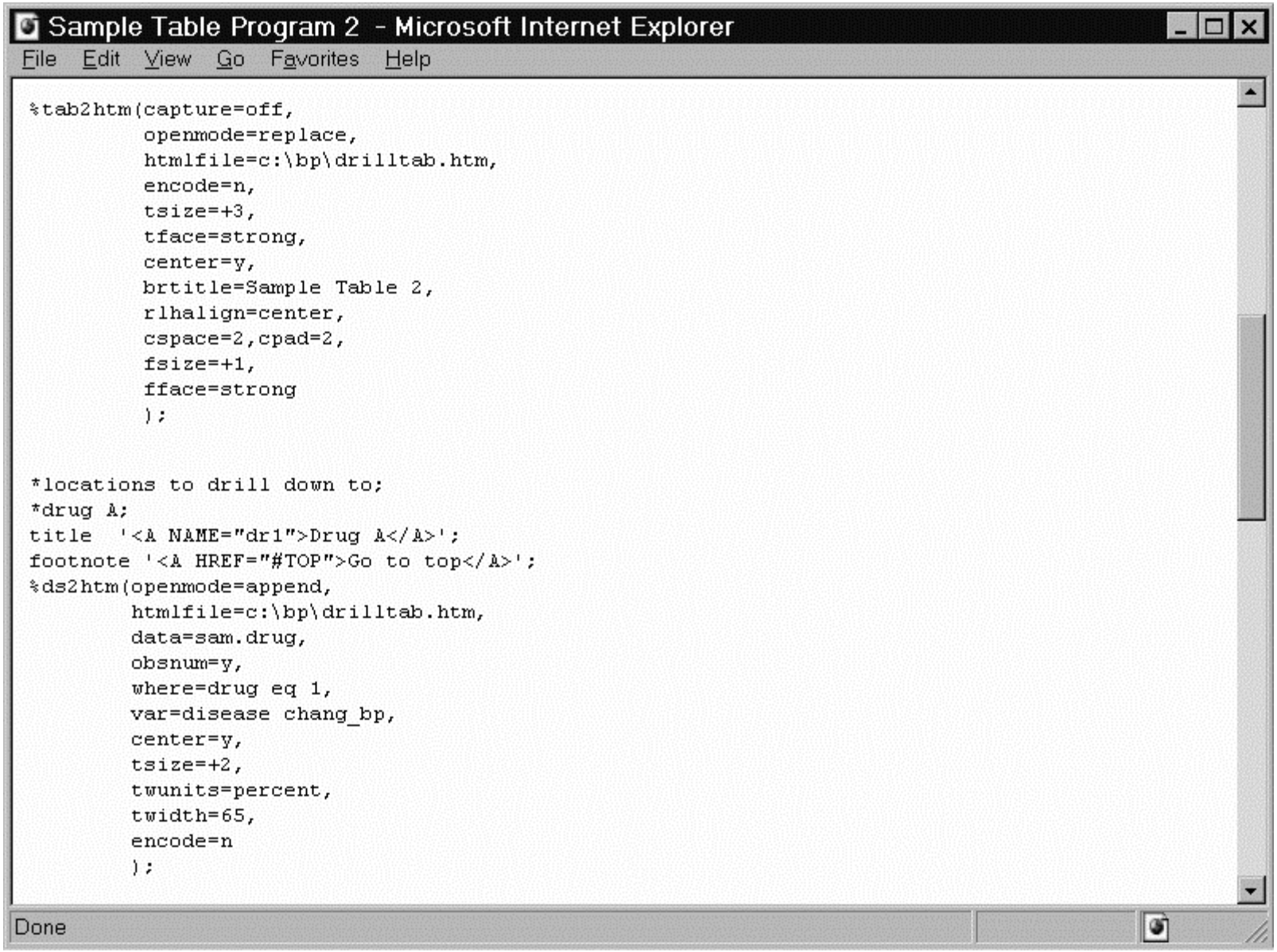
	Disease		
	1	2	3
Drug Name			
Drug A	29.33	31.17	20.17
Drug B	30.00	33.00	18.17
Drug C	17.33	3.00	7.50
Drug D	14.50	12.83	13.00
Summary	22.79	20.00	14.71

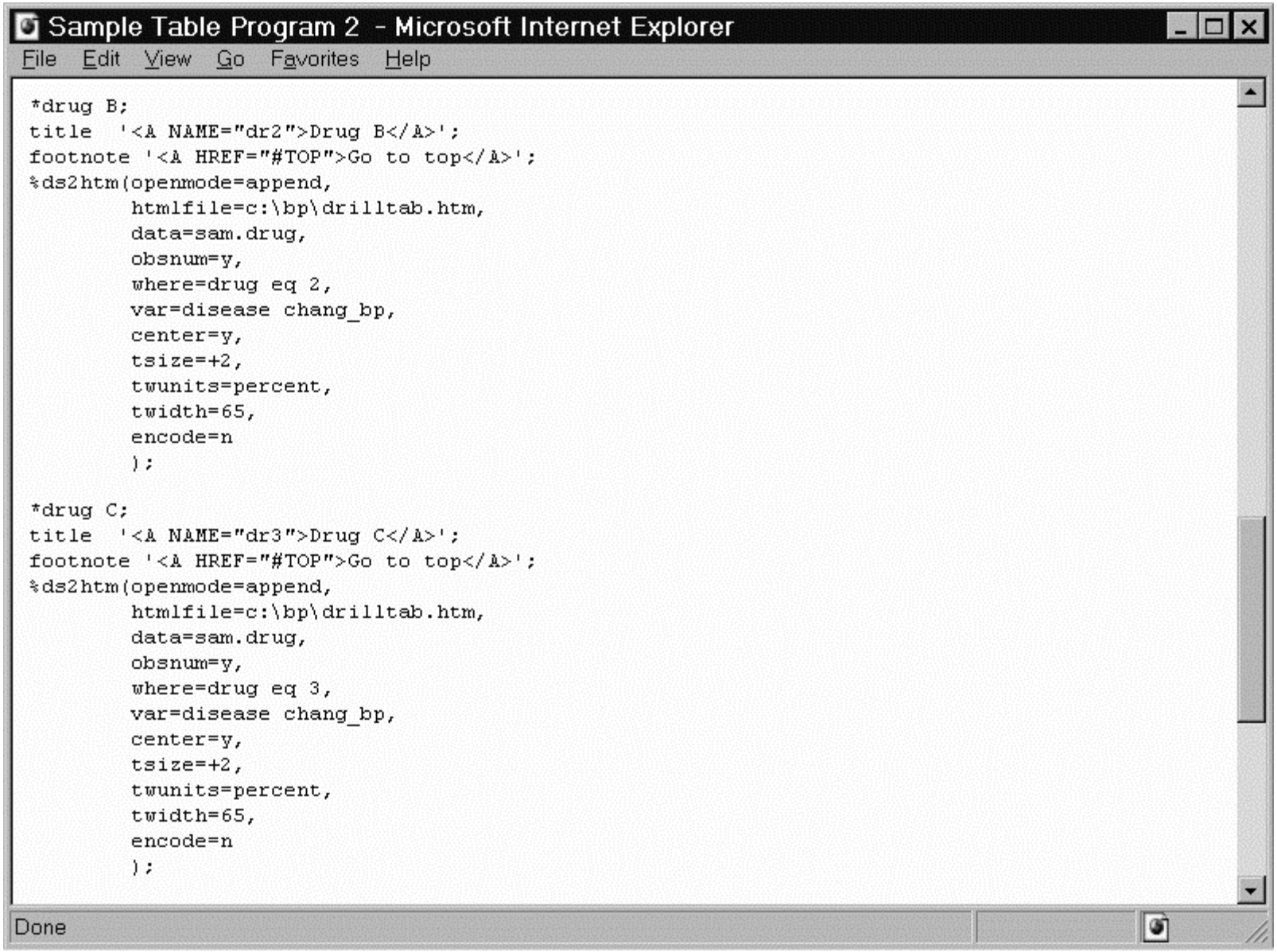
Drug A

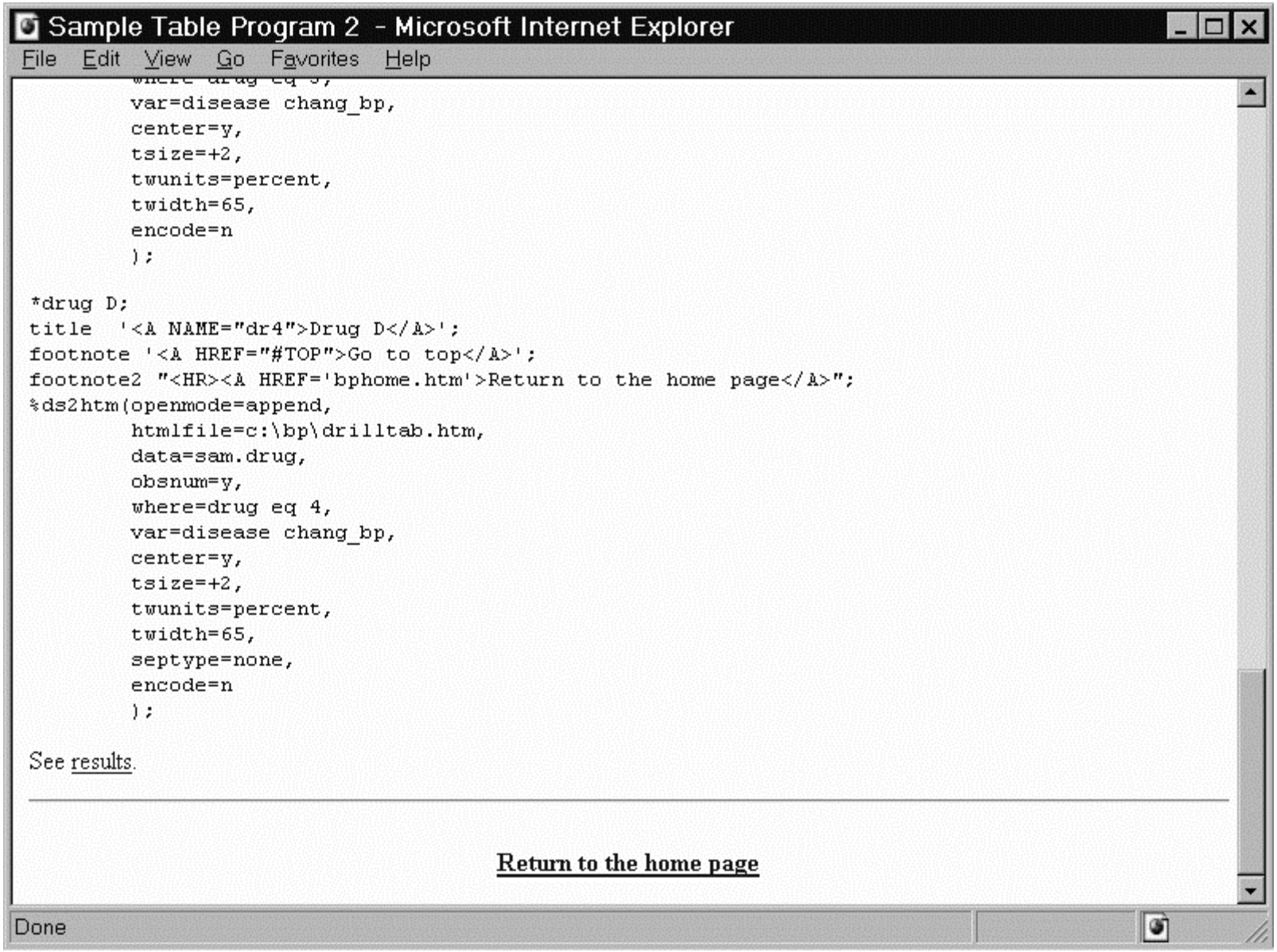
Obs.	Disease	Change in Blood Pressure
1	1	42
2	1	44
3	1	36
4	1	13
5	1	19

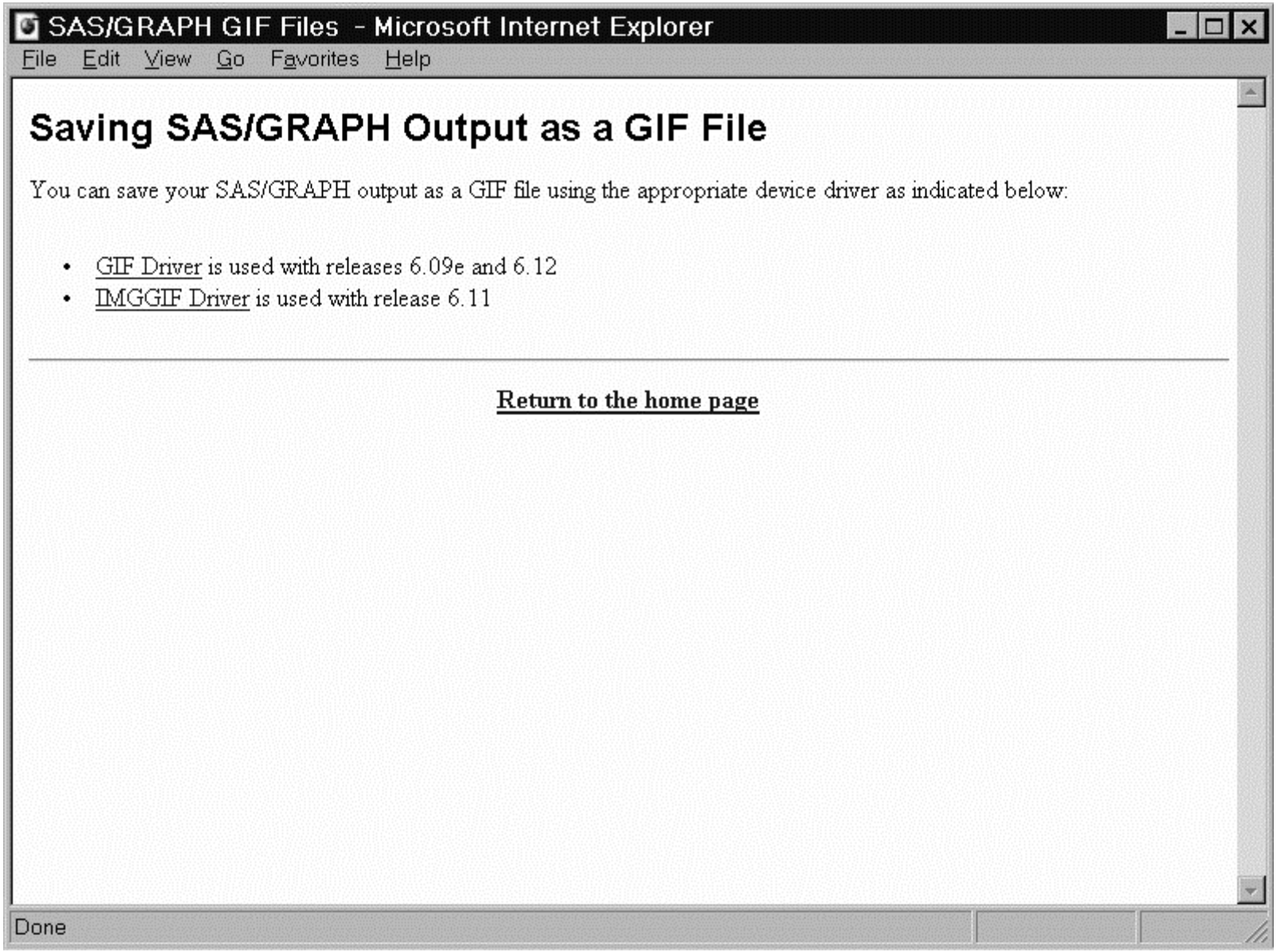

Sample Table 2 - Microsoft Internet Explorer
File Edit View Go Favorites Help
Drug C
Obs. Disease Change in Blood Pressure
37 1 28
38 1 21
39 1 1
40 1 29
41 1 6
42 1 19
43 2 -4
44 2 11
45 2 9
46 2 7
47 2 1
48 2 -6
49 3 21
50 3 1
51 3 2
52 3 9
53 3 3
54 3 9
Go to top
Done


Sample Table Program 2 - Microsoft Internet Explorer
File Edit View Go Favorites Help
Using the TAB2HTM Macro
Example 2
This is the SAS program used to create the Web page in example 2:
libname sam 'c:\sas\insight\sample';
options nocenter nodate nonumber;
title;footnote;
*define formats to use with links;
proc format;
value drug 1 = '<A HREF="#dr1"> Drug A </A>'
2 = '<A HREF="#dr2"> Drug B </A>'
3 = '<A HREF="#dr3"> Drug C </A>'
4 = '<A HREF="#dr4"> Drug D </A>';
run;
%tab2htm(capture=on);
title '<A NAME="TOP">Average Change in Blood Pressure</A>';
*main table;
proc tabulate data=sam.drug formchar='828384858687888898a8b8c'x;
class drug disease;
var chang_bp;
table drug='Drug Name'*f=10.2 all='Summary', disease*chang_bp=' '*mean=' ';
format drug drug.;
run;
Done


Sample Table Program 2 - Microsoft Internet Explorer
File Edit View Go Favorites Help
%tab2htm(capture=off,
openmode=replace,
htmlfile=c:\bp\drilltab.htm,
encode=n,
tsize=+3,
tface=strong,
center=y,
brtitle=Sample Table 2,
rlhalign=center,
cspace=2,cpad=2,
fsize=+1,
fface=strong
);
*locations to drill down to;
*drug A;
title '<A NAME="dr1">Drug A</A>';
footnote '<A HREF="#TOP">Go to top</A>';
%ds2htm(openmode=append,
htmlfile=c:\bp\drilltab.htm,
data=sam.drug,
obsnum=y,
where=drug eq 1,
var=disease chang_bp,
center=y,
tsize=+2,
twunits=percent,
twidth=65,
encode=n
);
Done


Sample Table Program 2 - Microsoft Internet Explorer
File Edit View Go Favorites Help
*drug B;
title '<A NAME="dr2">Drug B</A>';
footnote '<A HREF="#TOP">Go to top</A>';
%ds2htm(openmode=append,
htmlfile=c:\bp\drilltab.htm,
data=sam.drug,
obsnum=y,
where=drug eq 2,
var=disease chang_bp,
center=y,
tsize=+2,
twunits=percent,
twidth=65,
encode=n
);
*drug C;
title '<A NAME="dr3">Drug C</A>';
footnote '<A HREF="#TOP">Go to top</A>';
%ds2htm(openmode=append,
htmlfile=c:\bp\drilltab.htm,
data=sam.drug,
obsnum=y,
where=drug eq 3,
var=disease chang_bp,
center=y,
tsize=+2,
twunits=percent,
twidth=65,
encode=n
);
Done


Sample Table Program 2 - Microsoft Internet Explorer
File Edit View Go Favorites Help
var=disease chang_bp,
center=y,
tsize=+2,
twunits=percent,
twidth=65,
encode=n
);
*drug D;
title '<A NAME="dr4">Drug D</A>';
footnote '<A HREF="#TOP">Go to top</A>';
footnote2 "<HR><A HREF='bphome.htm'>Return to the home page</A>";
%ds2htm(openmode=append,
htmlfile=c:\bp\drilltab.htm,
data=sam.drug,
obsnum=y,
where=drug eq 4,
var=disease chang_bp,
center=y,
tsize=+2,
twunits=percent,
twidth=65,
septype=none,
encode=n
);
See results.
Return to the home page
Done


SAS/GRAPH GIF Files - Microsoft Internet Explorer
File Edit View Go Favorites Help
Saving SAS/GRAPH Output as a GIF File
You can save your SAS/GRAPH output as a GIF file using the appropriate device driver as indicated below:
GIF Driver is used with releases 6.09e and 6.12
IMGGIF Driver is used with release 6.11
Return to the home page
Done

GIF Drivers in 6.09e and 6.12 - Microsoft Internet Explorer

File Edit View Go Favorites Help

Graphs Produced Using the GIF Drivers of SAS/GRAPH

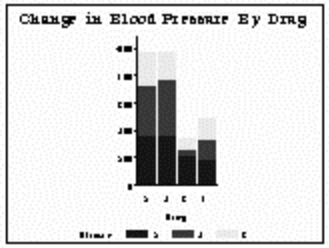
Releases 6.09e and 6.12

Release 6.09e and 6.12 of SAS/GRAPH support the following GIF device drivers. They display the image in various sizes.

- GIF160 (160 x 120 pixels)
- GIF260 (260 x 195 pixels)
- GIF373 (373 x 280 pixels)
- GIF570 (570 x 480 pixels)
- GIF733 (733 x 550 pixels)
- GIF (800 x 600 pixels)

View an example of a SAS/GRAPH program used to create a GIF file.

Driver used: GIF160 (160 x 120 pixels)

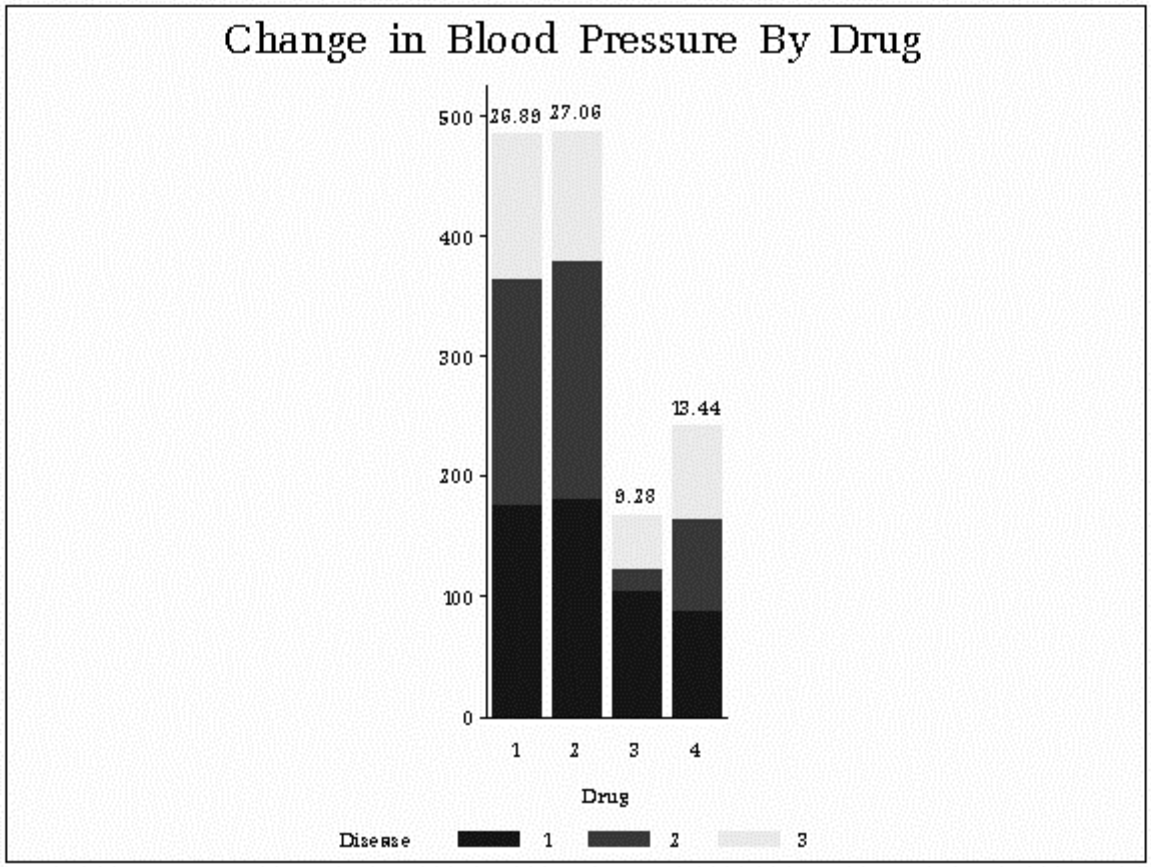


Done

GIF Drivers in 6.09e and 6.12 - Microsoft Internet Explorer

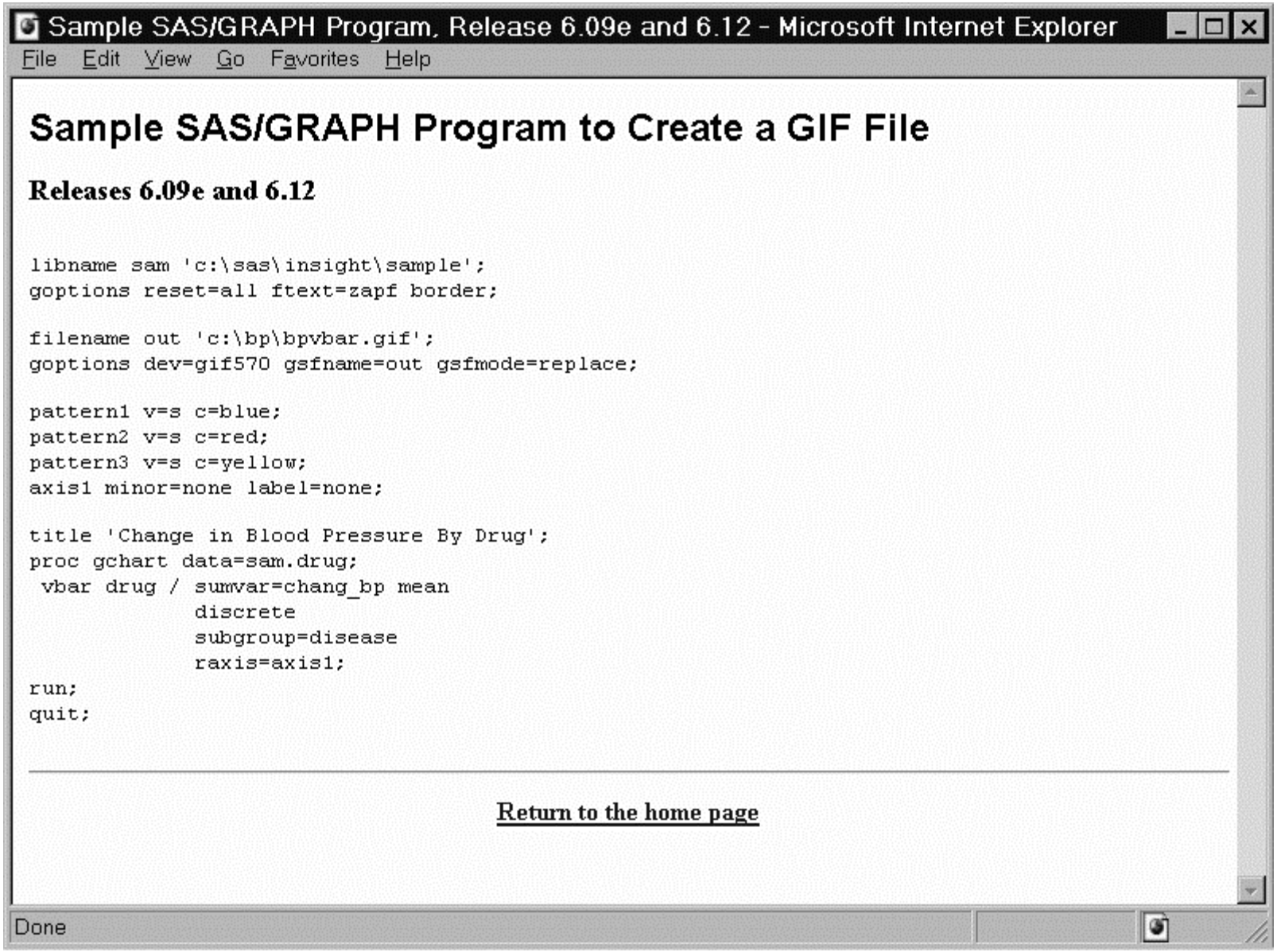
File Edit View Go Favorites Help

Driver used: GIF570 (570 x 480 pixels)



Go to top

Done


Sample SAS/GRAPH Program, Release 6.09e and 6.12 - Microsoft Internet Explorer
File Edit View Go Favorites Help
Sample SAS/GRAPH Program to Create a GIF File
Releases 6.09e and 6.12
libname sam 'c:\sas\insight\sample';
goptions reset=all ftext=zapf border;
filename out 'c:\bp\bpvbar.gif';
goptions dev=gif570 gsfname=out gsfmode=replace;
pattern1 v=s c=blue;
pattern2 v=s c=red;
pattern3 v=s c=yellow;
axis1 minor=none label=none;
title 'Change in Blood Pressure By Drug';
proc gchart data=sam.drug;
vbar drug / sumvar=chang_bp mean
discrete
subgroup=disease
raxis=axis1;
run;
quit;
Return to the home page
Done

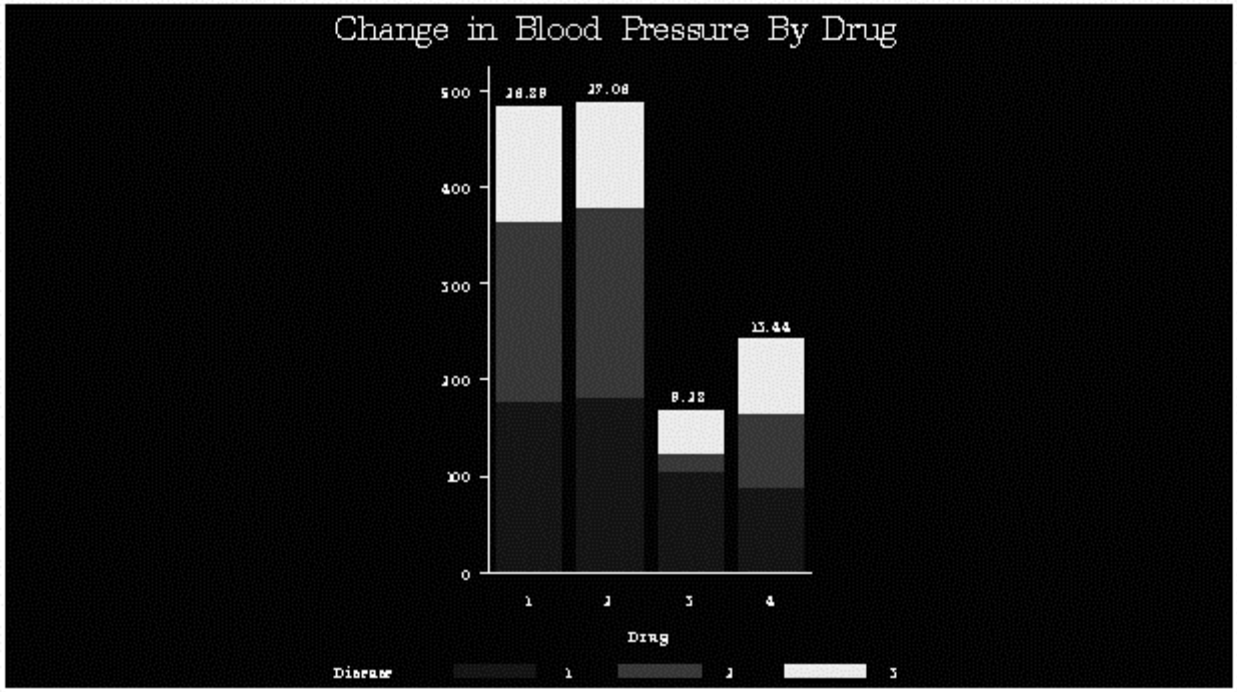
IMGGIF Driver in Release 6.11 - Microsoft Internet Explorer

File Edit View Go Favorites Help

Graph Produced Using the IMGGIF Driver of SAS/GRAPH

Release 6.11

In SAS Release 6.11 you can specify the IMGGIF device driver in your SAS/GRAPH program to create a GIF file. The following graph was created using the IMGGIF driver.



Done

Sample SAS/GRAPH Program, Release 6.11 - Microsoft Internet Explorer

File Edit View Go Favorites Help

Sample SAS/GRAPH Program to Create a GIF File

Release 6.11

```
libname sam 'c:\sas\insight\sample';
goptions reset=all ftext=zapf border;

filename out 'c:\bp\bpvbar0.gif';
goptions dev=imggif gsfname=out gsfmode=replace;

pattern1 v=s c=blue;
pattern2 v=s c=red;
pattern3 v=s c=yellow;
axis1 minor=none label=none;

title 'Change in Blood Pressure By Drug';
proc gchart data=sam.drug;
 vbar drug / sumvar=chang_bp mean
             discrete
             subgroup=disease
             raxis=axis1;
run;
quit;
```

Return to the home page

Done

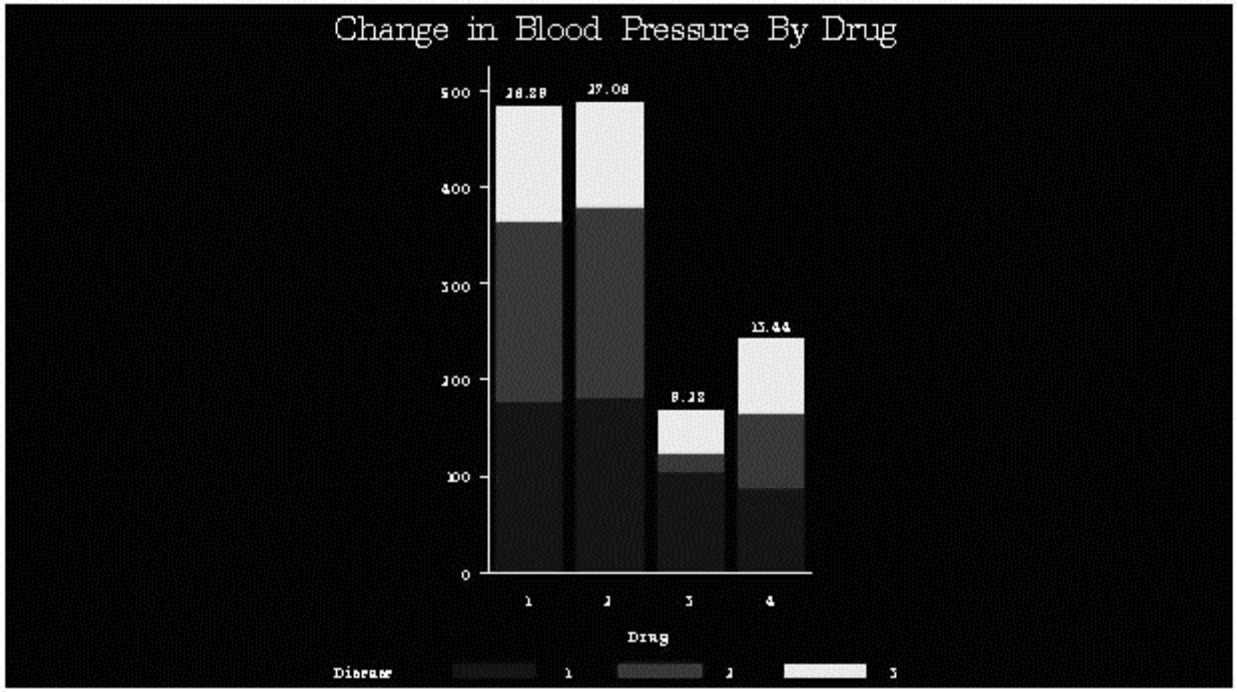
IMGJPEG Driver in Release 6.12 - Microsoft Internet Explorer

File Edit View Go Favorites Help

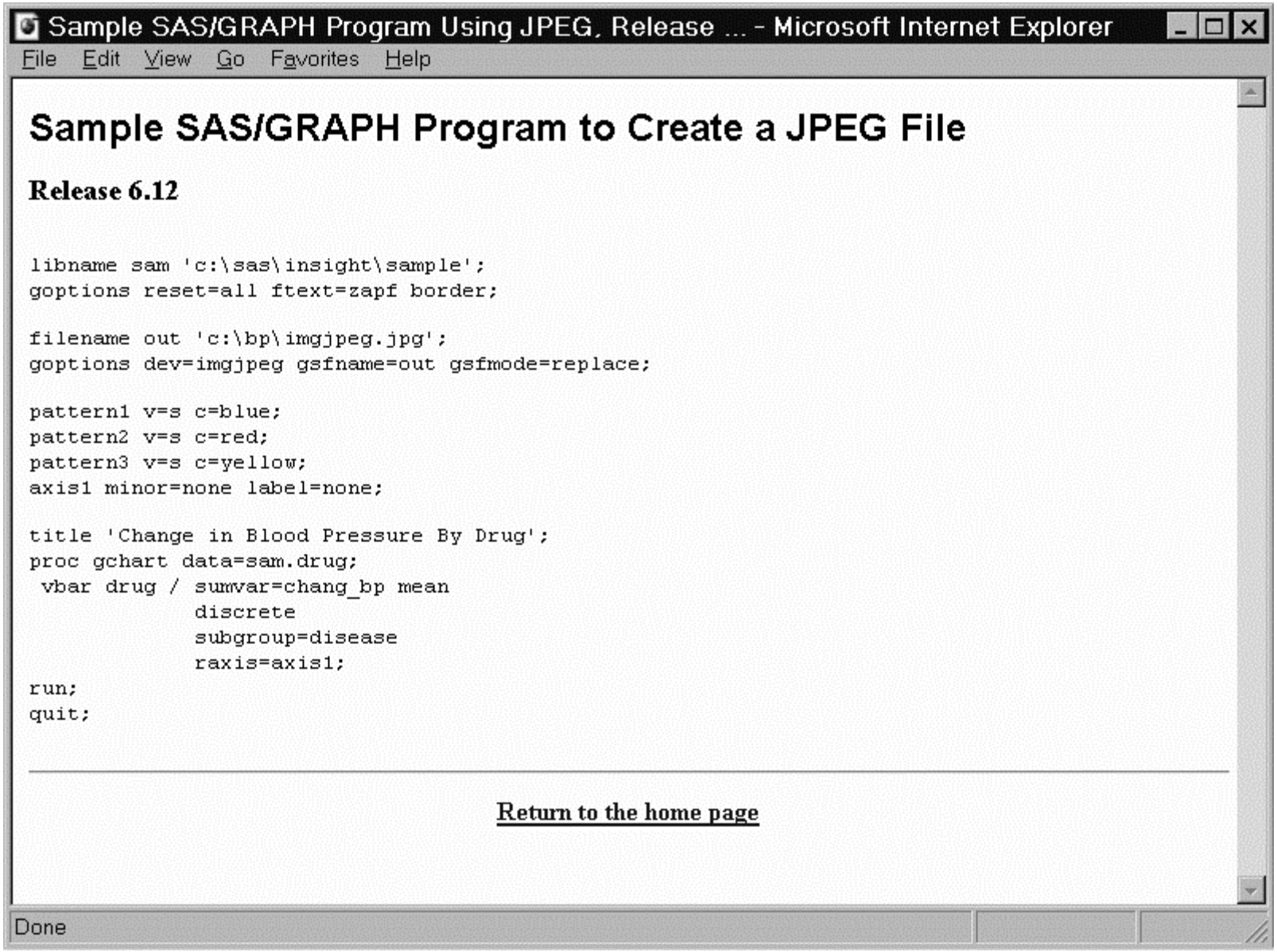
Graph Produced Using the IMGJPEG Driver of SAS/GRAPH

Release 6.12

With SAS Release 6.12 you can specify the IMGJPEG device driver in your SAS/GRAPH program to create a JPEG file. The following graph was created using the IMGJPEG driver.



Shortcut to \\ethel\agrone\bpdata\imgpgmjp.htm (local)


Sample SAS/GRAPH Program Using JPEG, Release ... - Microsoft Internet Explorer
File Edit View Go Favorites Help
Sample SAS/GRAPH Program to Create a JPEG File
Release 6.12
libname sam 'c:\sas\insight\sample';
goptions reset=all ftext=zapf border;
filename out 'c:\bp\imgjpeg.jpg';
goptions dev=imgjpeg gsfname=out gsfmode=replace;
pattern1 v=s c=blue;
pattern2 v=s c=red;
pattern3 v=s c=yellow;
axis1 minor=none label=none;
title 'Change in Blood Pressure By Drug';
proc gchart data=sam.drug;
vbar drug / sumvar=chang_bp mean
discrete
subgroup=disease
raxis=axis1;
run;
quit;
Return to the home page
Done

For more information

- View documentation at SAS's site: **http://www.sas.com/rnd/web/publish.html**
- Call 301-594-DCRT